POOR LEGIBILITY

ONE OR MORE PAGES IN THIS DOCUMENT ARE DIFFICULT TO READ
DUE TO THE QUALITY OF THE ORIGINAL

SITE/ _DENT FORM 1 (SI1) U.S. E.P. _PERFUND PROGRAM ENFORCEMENT SENSITI\ ORMATION
11/22/88 CERCLIS SITE_1.. ORMATION FORM (SIF) FOR INTERNAL US. LY

*SITE NAME: PACIFIC REFINING CO S/I RPM-OSC NAME/PHONE: _____/(___)___-____
*EPA ID NO: CAT000617407 FMS SITE/SPILL ID: 09 OTHER REG CONTACT NAME/PHONE: _____/(___)___-____

ALIAS NAME(S): _____, _____
_____, _____
_____, _____

*STREET: SAN PABLO AVE
*CITY: HERCULES
*COUNTY: CONTRA COSTA
*STATE: CA
*ZIP: 94547

*LATITUDE: 38/01/25.0
*LONGITUDE: 122/16/10.0
*LL SOURCE: R
*LL ACCURACY: _

CONGRESSIONAL DISTRICT: 07
*COUNTY CODE: 013
*SMSA: 7360
USGS HYDRO UNIT: 18050002

*FED. FACILITY FLAG: N
*RCRA FACILITY FLAG: _
NO FURTHER ACTION FLAG: N
DIOXIN TIER: _____
SITE NAME SOURCE: R

AGGREGATE CASE BUDGET OBLIGATIONS: _____
AGGREGATE FUND OBLIGATIONS: TBD

*SITE/INCIDENT ABSTRACT: _____
_____
_____
_____

*SITE CLASSIFICATION: ND

(NG) FUND LEAD/NEGOT
(FE) FEDERAL ENFORCEMENT
(RP) VOLUNTARY/NEGOTIATED RESP
(F) FUND LEAD/NO NEGOT
(SN) STATE NON-FUND
(LT) LIMITED TIME FOR NEGOTIATION
(SE) STATE ENFORCEMENT
(SF) STATE/FUND
(ND) NO DETERMINATION(DEFAULT)

*CORE DATA ELEMENT OR CODE ANY QUESTIONS? CALL CSC CERCLIS STAFF ACTION:_____(CSC ONLY)

SITE/ IDENT FORM 2 (SI2) U.S. E.P. UPERFUND PROGRAM ENFORCEMENT SENSITI FORMATION
11/22/88 CERCLIS SITE INFORMATION FORM (SIF) FOR INTERNAL US. NLY

*SITE NAME: PACIFIC REFINING CO S/I RPM-OSC NAME/PHONE: _____/(___)___-____
*EPA ID NO: CAT000617407 FMS SITE/SPILL ID: 09 OTHER REG CONTACT NAME/PHONE: _____/(___)___-____

*ENTRY NPL/STATUS INDICATOR: N *PROPOSED NPL UPDATE NO: __ *FINAL NPL UPDATE NO: __

(S) PRE-PROPOSAL TO NPL
(P) SITE CURRENTLY PROPOSED FOR THE NPL
(R) SITE REMOVED FROM THE PROPOSED NPL
(F) SITE CURRENTLY ON THE NPL
(D) SITE DELETED FROM NPL
(N) SITE IS NOT CURRENTLY NOR WAS FORMERLY ON THE PROPOSED OR FINAL NPL
(O) NON SITE: A SITE/INCIDENT WHICH WILL NOT COUNT IN THE INVENTORY OR IN STATISTICAL REPORTS

*SITE CATEGORY: _

(A) ABANDONED
(B) CHEM. PLANT/IND REF
(C) CITY CONTAMINATION
(D) DIOXIN
(F) FEDERAL FACILITY
(G) GROUND WATER
(H) HOUSING AREA/FARM
(I) IND. WASTE TREATMENT
(J) INORGANIC WASTE
(L) LANDFILL
(M) MANUFACTURING PLANT
(N) MILITARY RELATED
(O) OTHER
(P) PURE LAGOONS
(R) RADIOACTIVE SITE
(T) MINES/TAILING
(V) WATERWAYS/CREEKS/RIVERS
(W) WELLS

*OWNERSHIP INDICATOR: UN

(PR) PRIVATELY OWNED
(FF) FED. OWNED
(ST) STATE OWNED
(CO) COUNTY OWNED
(DI) DISTRICT OWNED
(MN) MUNICIPALITY OWNED
(IL) INDIAN LANDS
(MX) MIXED OWNERSHIP
(OH) OTHER
(UN) UNKNOWN

*INCIDENT TYPE: (FOR REMOVAL OSC'S ONLY) _

(O) OIL SPILL OCCURING AT A LOCATION NOT PREVIOUSLY IDENTIFIED AS A CERCLIS SITE
(N) SPILL (OTHER THAN OIL) OR OTHER REMOVAL AT A LOCATION NOT PREVIOUSLY IDENTIFIED AS ACERCLIS SITE

*CORE DATA ELEMENT OR CODE ANY QUESTIONS? CALL CSC CERCLIS STAFF ACTION:_____(CSC ONLY)

SITE/ _DENT COMMENTS (SIC) U.S. E.P. _PERFUND PROGRAM ENFORCEMENT SENSITI _FORMATION
11/22/88 CERCLIS SITE IN_ORMATION FORM (SIF) FOR INTERNAL US_ _LY

*SITE NAME: PACIFIC REFINING CO S/I RPM-OSC NAME/PHONE: _____/(___)___-____
*EPA ID NO: CAT000617407 FMS SITE/SPILL ID: 09 OTHER REG CONTACT NAME/PHONE: _____/(___)___-____

CSC USE	COMMENT TYPE	GROUP NUMBER	LINE NUMBER	*COMMENT
--------		001	01	PA (80/06/16) INDICATES HIGH APPARENT SERIOUSNESS OF PROBLEM
--------			02	AND
--------			03	SITE INSPECTION NECESSARY
--------	—	—	—	_____
--------	—	—	—	_____
--------	—	—	—	_____
--------	—	—	—	_____

*CORE DATA ELEMENT OR CODE ANY QUESTIONS? CALL CSC CERCLIS STAFF ACTION:_____(CSC ONLY)

REGIO. UTILITIES (RUT) U.S. E.P.. PERFUND PROGRAM ENFORCEMENT SENSITI\ ORMATION
11/22/88 CERCLIS SITE IN. ORMATION FORM (SIF) FOR INTERNAL US. LY

*SITE NAME: PACIFIC REFINING CO S/I RPM-OSC NAME/PHONE: _____/(___)___-____
*EPA ID NO: CAT000617407 FMS SITE/SPILL ID: 09 OTHER REG CONTACT NAME/PHONE: _____/(___)___-____

CSC USE	REGIONAL UTILITY CODE	DESCRIPTION	DATE 1 MM/DD/YY	DATE 2 MM/DD/YY	DATE 3 MM/DD/YY	FREE FIELD
---	HSCA01	ACIDS	// // //	_____		
---	HSCO01	OILY WASTES	// // //	_____		
---	HSCS01	SOLVENTS	// // //	_____		
---	HSC301	OTHER:ALUMINUM SLUDGE, REACTIVE WASTES	// // //	_____		
---	OPDS01	IMPOUNDMENT	// // //	_____		
---	9EV101	NEEDS ACTION	06/16/80 // //	_____		
---	9RCR01	RCRA (MAJOR) REGULATED:GENERATOR, TSD FACILITY (NON HANDLER) SEE NOTIF& PART A FILE	// // //	_____		
---	9OLD01	PRE 9/82 PA	// // //	_____		
---	_____	_____	_____	_____	_____	_____
---	_____	_____	_____	_____	_____	_____
---	_____	_____	_____	_____	_____	_____

*CORE DATA ELEMENT OR CODE ANY QUESTIONS? CALL CSC CERCLIS STAFF ACTION:_____(CSC ONLY)

*SITE NAME: PACIFIC REFINING CO
*EPA ID NO: CAT000617407 FMS SITE/SPILL ID: 09

S/I RPM-OSC NAME/PHONE: _____/(___)___-____
OTHER REG CONTACT NAME/PHONE: _____/(___)___-____

*OPERABLE UNIT IND: 00 *OPERABLE UNIT NAME: SITE EVAL/DISP

*OPERABLE UNIT DESCRIPTION: _____

*OPERABLE UNIT IND: ___ *OPERABLE UNIT NAME: _____

*OPERABLE UNIT DESCRIPTION: _____

*OPERABLE UNIT IND: ___ *OPERABLE UNIT NAME: _____

*OPERABLE UNIT DESCRIPTION: _____

NOTE: *FOR PREREMEDIAL AND REMOVAL EVENTS, OPERABLE UNIT INDICATOR = 00.
*FOR REMEDIAL EVENTS, ASSIGN OPERABLE UNIT INDIICATORS BEGINNING WITH 01.
*AN "ALIAS LINK" LINKS AN OPERABLE UNIT WITH A SPECIFIC ALIAS

*CORE DATA ELEMENT OR CODE

ANY QUESTIONS? CALL CSC CERCLIS STAFF

ACTION:_____(CSC ONLY)

PRERE. _AL
INFORMATION (EVT/SVT/FIN)
11/22/88

U.S. E.P.A. /ERFUND PROGRAM
CERCLIS SITE INFORMATION FORM (SIF)

ENFORCEMENT SENSITIVE)RMATION
FOR INTERNAL ONLY

*SITE NAME: PACIFIC REFINING CO
*EPA ID NO: CAT000617407 FMS SITE/SPILL ID: 09

S/I RPM-OSC NAME/PHONE: _____/(___)___-____
EVENT REGIONAL CONTACT NAME/PHONE: _____/(___)___-____
OTHER REG CONTACT NAME/PHONE: _____/(___)___-____

*OP UNIT *EVENT SUBEVENT TYPE	*OP UNIT NAME *EVENT NAME *SUBEVENT NAME	LEAD	START PLAN (MM/DD/YY)	START *PLAN (FY/Q)	START *ACTUAL (MM/DD/YY)	COMPLETE PLAN (MM/DD/YY)	COMPLETE *PLAN (FY/Q)	COMPLETE *ACTUAL (MM/DD/YY)	SPMS TARGET	SCAP NOTE
00	SITE EVAL/DISP									
DS1	DISCVRY 1	F	__/__/__	__/_	__/__/__	__/__/__	__/_	09/01/79	_	_____
PA1	PA 1	F	__/__/__	__/_	__/__/__	__/__/__	__/_	06/01/80	_	_____
PA2	PA 2	S	__/__/__	__/_	__/__/__	__/__/__	__/_	11/21/88	_	_____

2023361

OA6 2-0006

POTENTIAL HAZARDOUS WASTE SITE
IDENTIFICATION AND PRELIMINARY ASSESSMENT

EPA

REGION: IX

SITE NUMBER (to be assigned by Hq): 10032

NOTE: This form is completed for each potential hazardous waste site to help set priorities for site inspection. The information submitted on this form is based on available records and may be updated on subsequent forms as a result of additional inquiries and on-site inspections.

GENERAL INSTRUCTIONS: Complete Sections I and III through X as completely as possible before Section II *(Preliminary Assessment)*. File this form in the Regional Hazardous Waste Log File and submit a copy to: U.S. Environmental Protection Agency; Site Tracking System; Hazardous Waste Enforcement Task Force *(EN-335)*; 401 M St., SW; Washington, DC 20460.

I. SITE IDENTIFICATION

A. SITE NAME: Pacific Refining Co.

B. STREET *(or other identifier)*: San Pablo Ave.
P.O. Box 68, Hercules CA 94547

C. CITY: Hercules

D. STATE: CA

E. ZIP CODE: 94547

F. COUNTY NAME: Contra Costa

G. OWNER/OPERATOR *(if known)*

1. NAME: Same

2. TELEPHONE NUMBER: none

H. TYPE OF OWNERSHIP

☐ 1. FEDERAL ☐ 2. STATE ☐ 3 COUNTY ☐ 4 MUNICIPAL ☒ 5 PRIVATE ☐ 6 UNKNOWN

I. SITE DESCRIPTION

Oil Refinery with 3 surface impoundments

J. HOW IDENTIFIED *(ie., citizen's complaints, OSHA citations, etc.)*: RWQCB # 6

K. DATE IDENTIFIED *(mo., day, & yr.)*: 9-79

L. PRINCIPAL STATE CONTACT

1. NAME: RWQCB #6 San Francisco Bay Region

2. TELEPHONE NUMBER: (415) 464-1255

II. PRELIMINARY ASSESSMENT *(complete this section last)*

A. APPARENT SERIOUSNESS OF PROBLEM

☒ 1. HIGH ☐ 2. MEDIUM ☐ 3. LOW ☐ 4 NONE ☐ 5 UNKNOWN

B. RECOMMENDATION

☐ 1. NO ACTION NEEDED *(no hazard)*

☒ 3. SITE INSPECTION NEEDED
a. TENTATIVELY SCHEDULED FOR: _____
b. WILL BE PERFORMED BY: _____

☐ 2. IMMEDIATE SITE INSPECTION NEEDED
a. TENTATIVELY SCHEDULED FOR: _____
b. WILL BE PERFORMED BY: _____

☐ 4. SITE INSPECTION NEEDED *(low priority)*

C. PREPARER INFORMATION

1. NAME: Barbara Fontes

2. TELEPHONE NUMBER: (213) 426-9544

3. DATE *(mo., day, & yr.)*: June 16, 1980

III. SITE INFORMATION

A. SITE STATUS

☒ 1. ACTIVE *(Those industrial or municipal sites which are being used for waste treatment, storage, or disposal on a continuing basis, even if infrequently.)*

☐ 2. INACTIVE *(Those sites which no longer receive wastes.)*

☐ 3. OTHER *(specify)*: _____ *(Those sites that include such incidents like "midnight dumping" where no regular or continuing use of the site for waste disposal has occurred.)*

B. IS GENERATOR ON SITE?

☐ 1. NO ☒ 2. YES *(specify generator's four-digit SIC Code)*: _____

C. AREA OF SITE *(in acres)*: >7.2 - impoundments

D. IF APPARENT SERIOUSNESS OF SITE IS HIGH, SPECIFY COORDINATES

1. LATITUDE *(deg.-min.-sec.)*: 38° 4' 42"

2. LONGITUDE *(deg.-min.-sec.)*: 122° 16' 21"

E. ARE THERE BUILDINGS ON THE SITE?

☐ 1. NO ☐ 2. YES *(specify)*: Unknown

T2070-2 (10-79)

Continue On Reverse

10032

IV. CHARACTERIZATION OF SITE ACTIVITY

Indicate the major site activity(ies) and details relating to each activity by marking 'X' in the appropriate boxes.

'X'	A. TRANSPORTER	'X'	B. STORER	'X'	C. TREATER	'X'	D. DISPOSER
	1. RAIL		1. PILE		1. FILTRATION		1. LANDFILL
	2. SHIP	X	2. SURFACE IMPOUNDMENT		2. INCINERATION		2. LANDFARM
	3. BARGE		3. DRUMS		3. VOLUME REDUCTION		3. OPEN DUMP
	4. TRUCK		4. TANK, ABOVE GROUND		4. RECYCLING/RECOVERY	X	4. SURFACE IMPOUNDMENT
	5. PIPELINE		5. TANK, BELOW GROUND		5. CHEM./PHYS. TREATMENT		5. MIDNIGHT DUMPING
	6. OTHER (specify).		6. OTHER (specify)		6. BIOLOGICAL TREATMENT		6. INCINERATION
					7. WASTE OIL REPROCESSING		7. UNDERGROUND INJECTION
					8. SOLVENT RECOVERY		8. OTHER (specify)
					9. OTHER (specify)		

E. SPECIFY DETAILS OF SITE ACTIVITIES AS NEEDED

V. WASTE RELATED INFORMATION

A. WASTE TYPE

☐ 1 UNKNOWN ☒ 2. LIQUID ☐ 3. SOLID ☒ 4. SLUDGE ☐ 5. GAS

B. WASTE CHARACTERISTICS

☐ 1 UNKNOWN ☒ 2. CORROSIVE ☐ 3. IGNITABLE ☐ 4. RADIOACTIVE ☐ 5 HIGHLY VOLATILE
☒ 6. TOXIC ☐ 7 REACTIVE ☐ 8 INERT ☐ 9. FLAMMABLE

☐ 10. OTHER (specify) _____

C. WASTE CATEGORIES

1. Are records of wastes available? Specify items such as manifests, inventories, etc. below.

2. Estimate the amount (specify unit of measure) of waste by category; mark 'X' to indicate which wastes are present.

a. SLUDGE	b. OIL	c. SOLVENTS	d. CHEMICALS	e. SOLIDS	f. OTHER
AMOUNT: no info	AMOUNT: no info	AMOUNT: no info	AMOUNT: no info	AMOUNT: no info	AMOUNT:
UNIT OF MEASURE:	UNIT OF MEASURE:	UNIT OF MEASURE:	UNIT OF MEASURE:	UNIT OF MEASURE:	UNIT OF MEASURE:
' ' (1) PAINT, PIGMENTS	'X' X (1) OILY WASTES	'X' X (1) HALOGENATED SOLVENTS	'X' X (1) ACIDS	'X' X (1) FLYASH	' ' (1) LABORATORY PHARMACEUT.
' ' (2) METALS SLUDGES	' ' (2) OTHER (specify):	' ' (2) NON-HALOGNTD. SOLVENTS	' ' (2) PICKLING LIQUORS	' ' (2) ASBESTOS	' ' (2) HOSPITAL
' ' (3) POTW		' ' (3) OTHER (specify):	' ' (3) CAUSTICS	' ' (3) MILLING/ MINE TAILINGS	' ' (3) RADIOACTIVE
X (4) ALUMINUM SLUDGE			' ' (4) PESTICIDES	' ' (4) FERROUS SMLTG. WASTES	' ' (4) MUNICIPAL
' ' (5) OTHER (specify).			' ' (5) DYES/INKS	' ' (5) NON-FERROUS SMLTG. WASTES	' ' (5) OTHER (specify):
			' ' (6) CYANIDE	' ' (6) OTHER (specify)	
			' ' (7) PHENOLS		
			' ' (8) HALOGENS		
			' ' (9) PCB		
			' ' (10) METALS		
			' ' (11) OTHER (specify)		

EPA

POTENTIAL HAZARDOUS WASTE SITE LOG

SITE NUMBER: 10032

NOTE: The initial identification of a potential site or incident should not be interpreted as a finding of illegal activity or confirmation that an actual health or environmental threat exists. All identified sites will be assessed under the EPA's Hazardous Waste Site Enforcement and Response System to determine if a hazardous waste problem actually exists.

SITE NAME: Pacific Refining Co.

CITY	STATE	ZIP CODE
Hercules	CA	94547

SUMMARY OF POTENTIAL OR KNOWN PROBLEM

oil refinery with 3 surface impoundments

ITEM	DATE OF DETERMINATION OR COMPLETION	RESPONSIBLE ORGANIZATION OR INDIVIDUAL (EPA, State, Contractor, Other)	PERSON MAKING ENTRY TO LOG FORM	DATE ENTERED ON LOG (mo.,day,yr)
1. IDENTIFICATION OF POTENTIAL PROBLEM	9/79	WQCB #6		
2. PRELIMINARY ASSESSMENT				
APPARENT SERIOUSNESS OF PROBLEM: ☐ HIGH ☐ MEDIUM ☐ LOW ☐ NONE ☐ UNKNOWN				
3. SITE INSPECTION				
4. EPA TENTATIVE DISPOSITION (check appropriate item(s) below)				
☐ a. NO ACTION NEEDED				
☐ b. INVESTIGATIVE ACTION NEEDED				
☐ c. REMEDIAL ACTION NEEDED				
☐ d. ENFORCEMENT ACTION NEEDED				
5. EPA FINAL STRATEGY DETERMINATION (check appropriate item(s) below)				
☐ a. NO ACTION NEEDED				
☐ b. REMEDIAL ACTION NEEDED				
☐ c. REMEDIAL ACTION NEEDED BUT, NO RESOURCES AVAILABLE				
☐ d. ENFORCEMENT ACTION NEEDED				
☐ (1) CASE DEVELOPMENT PLAN PREPARED				
☐ (2) ENFORCEMENT CASE FILED OR ADMINISTRATIVE ORDER ISSUED				
6. STRATEGY COMPLETED				

EPA Form T2070-1 (10-79)

160 Spear Street, Suite 1380
San Francisco, California
94105-1535

415/957-0110

2023382

ICF TECHNOLOGY INCORPORATED

MEMORANDUM

TO: Paul La Courreye, U.S. Environmental Protection Agency

FROM: Charles K. So, ICF Technology, Incorporated

DATE: November 4, 1988

SUBJECT: Completed Work

THROUGH: Patty Cook, Ecology and Environment, Incorporated

COPY: Marcia Brooks, Ecology and Environment, Incorporated

This list is for the attached completed:

____ PA(s)

____ PA Review(s)

____ PA Reassessment(s)

__1__ Reevaluation(s)

PA-2 completed 11-17-88

Site Name	EPA I.D.#	City	Recommendation	State Lead
Pacific Refining Company	CAT000617407	Hercules, California	NFRAP	RWQCB

S

ERT → A, PA2, N, S, 11/18/88
SI1 → V, N

6410

160 Spear Street, Suite 1380
San Francisco, California
94105-1535

415/957-0110

2901

ICF TECHNOLOGY INCORPORATED

MEMORANDUM

TO: Paul La Courreye, U.S. Environmental Protection Agency
Region IX, Site Screening Coordinator

FROM: Charles K. So, ICF Technology, Incorporated CS

DATE: November 4, 1988

SUBJECT: Reevaluation of Pacific Refining Company, Hercules, Contra Costa County, California

TDD#: F9-8809-044

EPA ID#: CAT000617407

THROUGH: Sandy Szabat, Ecology and Environment, Incorporated

COPY: FIT Master File
Patty Cook, Ecology and Environment, Incorporated
Don Plain, California Department of Health Services
Roger James, California Regional Water Quality Control Board, San Francisco Bay Region
Romena Jonas, Jacobs Engineering

Introduction

Under Technical Directive Document number F9-8709-019, Ecology and Environment, Inc.'s Field Investigation Team (FIT) was tasked to reassess all Preliminary Assessments (PAs) in the Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS) with "active" or "pending" status according to guidelines established to implement the Superfund Amendments and Reauthorization Act (SARA). During the course of this reassessment process, PAs were identified that contained insufficient information to allow an accurate reassessment. FIT has been subsequently directed to reevaluate and upgrade these PAs as necessary to allow an accurate response determination to be made.

The strategy for determination of further action under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) is based solely on each site's potential to achieve a score high enough on the Hazard Ranking System (HRS) for inclusion on the National Priorities List (NPL). This strategy is intended to identify those sites posing the highest relative risk to human health or the environment. All other sites needing remedial or enforcement follow-up will be referred to the States or an appropriate Federal agency.

This site was evaluated primarily using the original HRS model. Additionally, this site was also evaluated for its potential to score using the draft revised HRS model. The following is a summary of FIT's findings with regard to this site.

Summary

Pacific Refining Company has operated since 1976 a refinery in the City of Hercules, Contra Costa County, California (Longitude: 122/16/10; Latitude: 38/01/25) (6). Gasoline, diesel fuel, distillate oils, propane and butane gases are produced from raw crude oil on site. The facility currently contains a wastewater treatment system which consists of a number of tanks and a biological treatment pond. The exact number and the types of tanks are not indicated in the available file information. Wastes generated from on-site operations include heat exchanger bundle cleaning and oil/water separator sludges and tank bottoms containing lead (1). The total estimated quantity of these wastes generated is 540 tons per year (6). The waste sludges are temporarily stored in tanks and are eventually transported off to a permitted Class I disposal site. Information regarding the names of the transporter and the disposal location is not available. Treated wastewater is discharged directly into San Pablo Bay under an NPDES permit (1).

The California Regional Water Quality Control Board, San Francisco Bay Region (RWQCB) identified the refinery as a potential hazardous waste site in September 1979 because of information indicated that on-site surface impoundments might exist. Since 1979, RWQCB has performed inspections at the facility under the NPDES requirements and noted violations including maintaining adequate pH and toxicity levels of the effluent from the wastewater treatment pond in one of the site visits. Pacific Refining Company is presently self-monitoring the wastewater discharge at the refinery under the supervision of RWQCB. The refinery is listed in the Resource Conservation and Recovery Act database as a large quantity generator (2).

Lying beneath the site is primarily clay loam soil (3). Ground water is found as high as 5 feet below ground surface. Due to salt water intrusion, the ground water in the Hercules area is brackish and non-potable. Municipal drinking water supply for the City of Hercules comes from the East Bay Municipal Utility District, which obtains potable surface water from the distant Mokelumne watershed (4, 5). Located less than 1,000 feet west of the site is San Pablo Bay. Beneficial uses of the bay include water contact and non-contact recreation, fish migration and spawning, wildlife habitat, preservation of rare and endangered species, commercial fishing (4). The surface water body is not used for drinking or irrigation water supply.

Recommendations

1) EPA

Based on a preliminary screening of the HRS factors, the site does not appear to be eligible for inclusion on the National Priorities List for the following reasons:

- o zero ground-water target population; and
- o low surface water target population.

Therefore, FIT recommends no further action under CERCLA at the Pacific Refining Company site.

2) State or Other Agency

Copies of this reevaluation will be sent to the California Department of Health Services and the California Regional Water Quality Control Board, San Francisco Bay Region for consideration.

EPA Concurrence	Initial	Date
No Further Action Under CERCLA	[signature]	11.7.88
High Priority SSI		
Medium Priority SSI		

References

1. Ricks, S.D., Refinery Manager, Pacific Refining Company to Philip L. Bobel, Chief of Waste Programs Branch, U.S. Environmental Protection Agency, Region IX. Letter, January 6, 1986.

2. Resource Conservation and Recovery Act database, dated June 21, 1988.

3. U.S. Department of Agriculture, Soil Conservation Service. Soil Survey of Contra Costa County, California.

4. Dreessen, Richard, S., ICF Technology, Incorporated. Preliminary Assessment of Hercules Powder Company, Hercules, California, June 4, 1987.

5. East Bay Municipal Utility District. Urban Water Management Plan. November 1985.

6. Pacific Refining Company. Hazardous Waste Permit Application, EPA Form 3510-3. November 19, 1980.

******CONFIDENTIAL****PRE-DECISIONAL DOCUMENT******

SITE REEVALUATION WORKSHEET

Site Name: Pacific Refining Company
EPA ID No.: CAT000617407
TDD No.: F9-8809-044
City: Hercules, California
County: Contra Costa County

Site Evaluator: Charles K. So, ICF Technology, Incorporated CS
Date: November 4, 1988

POTENTIAL RELEASES

[X] Ground Water
[X] Surface Water
[ ] Air
[ ] On-site/Direct Contact

SCORING SCENARIOS		Best Case	Worst Case
GROUND-WATER ROUTE SCORE (Sgw)	=	0	4.90
SURFACE WATER ROUTE SCORE (Sw)	=	2.57	20.36
AIR ROUTE SCORE (Sa)	=	0	0
TOTAL SCORE (Sm)	=	1.49	12.11

NEW HRS MODEL CONSIDERATIONS

GROUND-WATER ROUTE: There will not be any major changes in the score of this route.

SURFACE WATER ROUTE: An increase in the target distance to fifteen miles downstream from the probable point of entry of any contaminants from the site might increase the target population, thereby potentially increasing the score of this route.

AIR ROUTE: There is no information indicating that an observed release or a potential for unregulated release of hazardous substances into the atmosphere exists at the site.

ON-SITE ROUTE: Access to the site is restricted; therefore, an on-site exposure risk is low.

******CONFIDENTIAL****PRE-DECISIONAL DOCUMENT******

GROUND-WATER ROUTE WORKSHEET

	Best Case	Worst Case	Ref.	Conf.
1 OBSERVED RELEASE	0	0		K
2 ROUTE CHARACTERISTICS				
DEPTH TO AQUIFER OF CONCERN (x2)	6	6		K
NET PRECIPITATION	2	2		K
PERMEABILITY OF UNSATURATED ZONE	1	1		K
PHYSICAL STATE	3	3		K
ROUTE CHARACT. SCORE =	12	12		K
3 CONTAINMENT	1	3	1	2
4 WASTE CHARACTERISTICS:				
TOXICITY/PERSISTENCE	18	18		K
HAZARDOUS WASTE QUANTITY	5	8	2	3
WASTE CHARACT. SCORE =	23	26		3
5 TARGETS:				
GROUND-WATER USE (x3)	0	3	3	1
DISTANCE TO NEAREST WELL /POPULATION SERVED	0	0		K
TOTAL TARGETS SCORE =	0	3		1
GROUND-WATER ROUTE SCORE =	0	4.90		1

******CONFIDENTIAL****PRE-DECISIONAL DOCUMENT******

SURFACE WATER ROUTE WORKSHEET

	Best Case	Worst Case	Ref.	Conf.
1 OBSERVED RELEASE	0	0		K
2 ROUTE CHARACTERISTICS				
FACILITY SLOPE AND INTERVENING TERRAIN	1	3	4	2
1-yr., 24-hr. RAINFALL	2	2		K
DISTANCE TO NEAREST SURFACE WATER (x2)	6	6		K
PHYSICAL STATE	3	3		K
ROUTE CHARACT. SCORE =	12	14		2
3 CONTAINMENT	1	3	1	2
4 WASTE CHARACTERISTICS:				
TOXICITY/PERSISTENCE	18	18		K
HAZARDOUS WASTE QUANTITY	5	8	2	3
WASTE CHARACT. SCORE =	23	26		3
5 TARGETS:				
SURFACE WATER USE (x3)	6	6		K
DISTANCE TO A SENSITIVE ENVIRONMENT (x2)	0	6	5	3
POPULATION SERVED/ DISTANCE TO DOWNSTREAM WATER INTAKE	0	0		K
TOTAL TARGETS SCORE =	6	12		3
SURFACE WATER ROUTE SCORE =	2.57	20.36		2

******CONFIDENTIAL****PRE-DECISIONAL DOCUMENT******

AIR ROUTE WORK SHEET

	Best Case	Worst Case	Ref.	Conf.
1 OBSERVED RELEASE	0	0		K
DATE AND LOCATION:				
2 WASTE CHARACTERISTICS:				
REACTIVITY AND INCOMPATIBILITY				
TOXICITY (x3)				
HAZARDOUS WASTE QUANTITY				
WASTE CHARACT. SCORE =				
3 TARGETS:				
POPULATION WITHIN 4 MILES				
DISTANCE TO SENSITIVE ENVIRONMENT (x2)				
LAND USE				
TOTAL TARGETS SCORE =				
AIR ROUTE SCORE =	0	0		K

Rationale

1. Assume for the worst case since containment systems on site are not known.

2. For the best case, use one year quantity; for the worst case, multiply the annual quantity generated by the number of operating years which is approximately 12 years.

3. Assume that ground water might be used for industrial water supply.

4. Assume for the worst case since information on facility slope and terrain is not available.

5. Assume that habitats of federally designated endangered species might be found along San Pablo Bay.

Please print or type in the unshaded areas only
(fill-in areas are spaced for elite type, i.e., 12 characters/inch).

Form Approved OMB No. 158-R0175

ENVIRONMENTAL PROTECTION AGENCY

GENERAL INFORMATION

Consolidated Permits Program
(Read the "General Instructions" before starting.)

GENERAL

I. EPA I.D. NUMBER

F C A T 0 0 0 6 1 7 4 0 7

SELECTED ITEMS

I. EPA I.D. NUMBER

III. FACILITY NAME

V. FACILITY MAILING ADDRESS

VI. FACILITY LOCATION

PLEASE PLACE LABEL IN THIS SPACE

SEP 1980

GENERAL INSTRUCTIONS

If a preprinted label has been provided, affix it in the designated space. Review the information carefully; if any of it is incorrect, cross through it and enter the correct data in the appropriate fill-in area below. Also, if any of the preprinted data is absent *(the area to the left of the label space lists the information that should appear)*, please provide it in the proper fill-in area(s) below. If the label is complete and correct, you need not complete Items I, III, V, and VI *(except VI-B which must be completed regardless)*. Complete all items if no label has been provided. Refer to the instructions for detailed item descriptions and for the legal authorizations under which this data is collected.

II. POLLUTANT CHARACTERISTICS

INSTRUCTIONS: Complete A through J to determine whether you need to submit any permit application forms to the EPA. If you answer "yes" to any questions, you must submit this form and the supplemental form listed in the parenthesis following the question. Mark "X" in the box in the third column if the supplemental form is attached. If you answer "no" to each question, you need not submit any of these forms. You may answer "no" if your activity is excluded from permit requirements; see Section C of the instructions. See also, Section D of the instructions for definitions of bold-faced terms.

SPECIFIC QUESTIONS	MARK 'X' YES	NO	FORM ATTACHED	SPECIFIC QUESTIONS	MARK 'X' YES	NO	FORM ATTACHED
A. Is this facility a publicly owned treatment works which results in a discharge to waters of the U.S.? (FORM 2A)		X		B. Does or will this facility *(either existing or proposed)* include a concentrated animal feeding operation or aquatic animal production facility which results in a discharge to waters of the U.S.? (FORM 2B)		X	
C. Is this a facility which currently results in discharges to waters of the U.S. other than those described in A or B above? (FORM 2C)	X			D. Is this a proposed facility *(other than those described in A or B above)* which will result in a discharge to waters of the U.S.? (FORM 2D)		X	
E. Does or will this facility treat, store, or dispose of hazardous wastes? (FORM 3)	X		X	F. Do you or will you inject at this facility industrial or municipal effluent below the lowermost stratum containing, within one quarter mile of the well bore, underground sources of drinking water? (FORM 4)		X	
G. Do you or will you inject at this facility any produced water or other fluids which are brought to the surface in connection with conventional oil or natural gas production, inject fluids used for enhanced recovery of oil or natural gas, or inject fluids for storage of liquid hydrocarbons? (FORM 4)		X		H. Do you or will you inject at this facility fluids for special processes such as mining of sulfur by the Frasch process, solution mining of minerals, in situ combustion of fossil fuel, or recovery of geothermal energy? (FORM 4)		X	
I. Is this facility a proposed stationary source which is one of the 28 industrial categories listed in the instructions and which will potentially emit 100 tons per year of any air pollutant regulated under the Clean Air Act and may affect or be located in an attainment area? (FORM 5)		X		J. Is this facility a proposed stationary source which is NOT one of the 28 industrial categories listed in the instructions and which will potentially emit 250 tons per year of any air pollutant regulated under the Clean Air Act and may affect or be located in an attainment area? (FORM 5)		X	

III. NAME OF FACILITY

1 SKIP: PACIFIC REFINING COMPANY

IV. FACILITY CONTACT

A. NAME & TITLE (last, first, & title)	B. PHONE (area code & no.)
2 HARRINGTON R W	415 799 6600

V. FACILITY MAILING ADDRESS

A. STREET OR P.O. BOX

3 P O Box 68

B. CITY OR TOWN	C. STATE	D. ZIP CODE
4 Hercules	CA	94547

VI. FACILITY LOCATION

A. STREET, ROUTE NO. OR OTHER SPECIFIC IDENTIFIER

5 San Pablo Avenue

B. COUNTY NAME

Contra Costa

C. CITY OR TOWN	D. STATE	E. ZIP CODE	F. COUNTY CODE (if known)
6 Hercules	CA	94547	013

EPA Form 3510-1 (6-80)

*Refer to X A. Existing NPDES permit does not expire until July 18, 1983.

CONTINUE ON REVERSE

CONTINUED FROM THE FRONT

VII. SIC CODES (4-digit, in order of priority)

A. FIRST	B. SECOND
2911 (specify) Petroleum Refining	(specify)
C. THIRD	**D. FOURTH**
(specify)	(specify)

VIII. OPERATOR INFORMATION

A. NAME

Pacific Refining Company

B. Is the name listed in Item VIII-A also the owner? ☒ YES ☐ NO

C. STATUS OF OPERATOR (Enter the appropriate letter into the answer box; if "Other", specify.)

F = FEDERAL
S = STATE
P = PRIVATE
M = PUBLIC (other than federal or state)
O = OTHER (specify)

P (specify)

D. PHONE (area code & no.)

A 415 799 6600

E. STREET OR P.O. BOX

PO Box 68

F. CITY OR TOWN

Hercules

G. STATE CA

H. ZIP CODE 94547

IX. INDIAN LAND

Is the facility located on Indian lands? ☐ YES ☒ NO

X. EXISTING ENVIRONMENTAL PERMITS

A. NPDES (Discharges to Surface Water)	CA0005096	**D. PSD** (Air Emissions from Proposed Sources)	
B. UIC (Underground Injection of Fluids)		**E. OTHER** (specify)	PLANT 32 (specify) BAAQMD PERMITS
C. RCRA (Hazardous Wastes)		**E. OTHER** (specify)	PLANT 36 (specify) BAAQMD PERMITS

XI. MAP

F9: 4A

Attach to this application a topographic map of the area extending to at least one mile beyond property boundaries. The map must show the outline of the facility, the location of each of its existing and proposed intake and discharge structures, each of its hazardous waste treatment, storage, or disposal facilities, and each well where it injects fluids underground. Include all springs, rivers and other surface water bodies in the map area. See instructions for precise requirements.

XII. NATURE OF BUSINESS

F9: 4B

Petroleum Refining - Raw crude oil is processed into gasoline, diesel, fuel oil, distillate oils, propane and butane.

XIII. CERTIFICATION (see instructions)

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this application and all attachments and that, based on my inquiry of those persons immediately responsible for obtaining the information contained in the application, I believe that the information is true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

A. NAME & OFFICIAL TITLE (type or print)	B. SIGNATURE	C. DATE SIGNED
K.T. Palmer	K.T. Palmer	[illegible]

COMMENTS FOR OFFICIAL USE ONLY

(Fill–in areas are spaced for elite type, i.e., 12 characters/inch).

Form Approved OMB No. 158-S80004

FORM 3 3 RCRA

EPA

ENVIRONMENTAL PROTECTION AGENCY

HAZ... US WASTE PERMIT APPLICATIO...

Consolidated Permits Program

(This information is required under Section 3005 of RCRA.)

I. EPA I.D. NUMBER

F C A T 0 0 0 6 1 7 4 0 7 1

FOR OFFICIAL USE ONLY

APPLICATION APPROVED	DATE RECEIVED (yr., mo., & day)	COMMENTS

II. FIRST OR REVISED APPLICATION

Place an "X" in the appropriate box in A or B below *(mark one box only)* to indicate whether this is the first application you are submitting for your facility or a revised application. If this is your first application and you already know your facility's EPA I.D. Number, or if this is a revised application, enter your facility's EPA I.D. Number in Item I above.

A. FIRST APPLICATION *(place an "X" below and provide the appropriate date)*

[X] 1. EXISTING FACILITY *(See instructions for definition of "existing" facility. Complete item below.)*

[ ] 2. NEW FACILITY *(Complete item below.)*

FOR EXISTING FACILITIES, PROVIDE THE DATE (yr., mo., & day) OPERATION BEGAN OR THE DATE CONSTRUCTION COMMENCED *(use the boxes to the left)*

YR.	MO.	DAY
7 6	0 4	0 1

FOR NEW FACILITIES, PROVIDE THE DATE (yr., mo., & day) OPERATION BEGAN OR IS EXPECTED TO BEGIN

YR.	MO.	DAY

B. REVISED APPLICATION *(place an "X" below and complete Item I above)*

[ ] 1. FACILITY HAS INTERIM STATUS

[ ] 2. FACILITY HAS A RCRA PERMIT

III. PROCESSES – CODES AND DESIGN CAPACITIES

A. PROCESS CODE -- Enter the code from the list of process codes below that best describes each process to be used at the facility. Ten lines are provided for entering codes. If more lines are needed, enter the code(s) in the space provided. If a process will be used that is not included in the list of codes below, then describe the process *(including its design capacity)* in the space provided on the form *(Item III-C)*.

B. PROCESS DESIGN CAPACITY -- For each code entered in column A enter the capacity of the process.

1. AMOUNT -- Enter the amount.
2. UNIT OF MEASURE -- For each amount entered in column B(1), enter the code from the list of unit measure codes below that describes the unit of measure used. Only the units of measure that are listed below should be used.

PROCESS	PROCESS CODE	APPROPRIATE UNITS OF MEASURE FOR PROCESS DESIGN CAPACITY
Storage:		
CONTAINER *(barrel, drum, etc.)*	S01	GALLONS OR LITERS
TANK	S02	GALLONS OR LITERS
WASTE PILE	S03	CUBIC YARDS OR CUBIC METERS
SURFACE IMPOUNDMENT	S04	GALLONS OR LITERS
Disposal:		
INJECTION WELL	D79	GALLONS OR LITERS
LANDFILL	D80	ACRE-FEET *(the volume that would cover one acre to a depth of one foot)* OR HECTARE-METER
LAND APPLICATION	D81	ACRES OR HECTARES
OCEAN DISPOSAL	D82	GALLONS PER DAY OR LITERS PER DAY
SURFACE IMPOUNDMENT	D83	GALLONS OR LITERS
Treatment:		
TANK	T01	GALLONS PER DAY OR LITERS PER DAY
SURFACE IMPOUNDMENT	T02	GALLONS PER DAY OR LITERS PER DAY
INCINERATOR	T03	TONS PER HOUR OR METRIC TONS PER HOUR; GALLONS PER HOUR OR LITERS PER HOUR
OTHER *(Use for physical, chemical, thermal or biological treatment processes not occurring in tanks, surface impoundments or incinerators. Describe the processes in the space provided; Item III-C.)*	T04	GALLONS PER DAY OR LITERS PER DAY

UNIT OF MEASURE	UNIT OF MEASURE CODE
GALLONS	G
LITERS	L
CUBIC YARDS	Y
CUBIC METERS	C
GALLONS PER DAY	U
LITERS PER DAY	V
TONS PER HOUR	D
METRIC TONS PER HOUR	W
GALLONS PER HOUR	E
LITERS PER HOUR	H
ACRE-FEET	A
HECTARE-METER	F
ACRES	B
HECTARES	Q

EXAMPLE FOR COMPLETING ITEM III *(shown in line numbers X-1 and X-2 below)*: A facility has two storage tanks, one tank can hold 200 gallons and the other can hold 400 gallons. The facility also has an incinerator that can burn up to 20 gallons per hour.

C DUP T/A C 1

LINE NUMBER	A. PROCESS CODE (from list above)	B. PROCESS DESIGN CAPACITY 1. AMOUNT (specify)	B. PROCESS DESIGN CAPACITY 2. UNIT OF MEASURE (enter code)	FOR OFFICIAL USE ONLY	LINE NUMBER	A. PROCESS CODE (from list above)	B. PROCESS DESIGN CAPACITY 1. AMOUNT	B. PROCESS DESIGN CAPACITY 2. UNIT OF MEASURE (enter code)	FOR OFFICIAL USE ONLY
X-1	S 0 2	600	G		5	T 0 4	300,000	U	
X-2	T 0 3	20	E		6				
1	S 0 4	187,000	G		7				
2	S 0 2	12,600	G		8				
3	T 0 4	50	U		9				
4	T 0 1	140	U		10				

Continued from the front.

C. PROCESSES *(continued)*

SPACE FOR ADDITIONAL PROCESS CODES OR DESCRIBING OTHER PROCESSES *(code "T04")* FOR EACH PROCESS ENTERED HERE INCLUDE DESIGN CAPACITY.

T04 - Gravity oil/water separator. See III B, Line #3.

T04 - Biological Treatment Pond. See III B, Line #5.

IV. DESCRIPTION OF HAZARDOUS WASTES

A. EPA HAZARDOUS WASTE NUMBER – Enter the four–digit number from 40 CFR, Subpart D for each listed hazardous waste you will handle. If you handle hazardous wastes which are not listed in 40 CFR, Subpart D, enter the four–digit number*(s)* from 40 CFR, Subpart C that describes the characteristics and/or the toxic contaminants of those hazardous wastes.

B. ESTIMATED ANNUAL QUANTITY – For each **listed waste** entered in column A estimate the quantity of that waste that will be handled on an annual basis. For each **characteristic** or **toxic contaminant** entered in column A estimate the total annual quantity of all the non–listed waste*(s)* that will be handled which possess that characteristic or contaminant.

C. UNIT OF MEASURE – For each quantity entered in column B enter the unit of measure code. Units of measure which must be used and the appropriate codes are:

ENGLISH UNIT OF MEASURE	CODE	METRIC UNIT OF MEASURE	CODE
POUNDS	P	KILOGRAMS	K
TONS	T	METRIC TONS	M

If facility records use any other unit of measure for quantity, the units of measure must be converted into one of the required units of measure taking into account the appropriate density or specific gravity of the waste.

D. PROCESSES

1. PROCESS CODES:
   For **listed hazardous waste:** For each **listed** hazardous waste entered in column A select the code*(s)* from the list of process codes contained in Item III to indicate how the waste will be stored, treated, and/or disposed of at the facility.
   For **non–listed hazardous wastes:** For each characteristic or toxic contaminant entered in column A, select the code*(s)* from the list of process codes contained in Item III to indicate **all** the processes that will be used to store, treat, and/or dispose of all the non–listed hazardous wastes that possess that characteristic or toxic contaminant.
   Note: Four spaces are provided for entering process codes. If more are needed: (1) Enter the first three as described above; (2) Enter "000" in the extreme right box of Item IV-D(1); and (3) Enter in the space provided on page 4, the line number and the additional code*(s)*.

2. PROCESS DESCRIPTION: If a code is not listed for a process that will be used, describe the process in the space provided on the form.

NOTE: **HAZARDOUS WASTES DESCRIBED BY MORE THAN ONE EPA HAZARDOUS WASTE NUMBER** – Hazardous wastes that can be described by more than one EPA Hazardous Waste Number shall be described on the form as follows:

1. Select one of the EPA Hazardous Waste Numbers and enter it in column A. On the same line complete columns B,C, and D by estimating the total annual quantity of the waste and describing all the processes to be used to treat, store, and/or dispose of the waste.
2. In column A of the next line enter the other EPA Hazardous Waste Number that can be used to describe the waste. In column D(2) on that line enter "included with above" and make no other entries on that line.
3. Repeat step 2 for each other EPA Hazardous Waste Number that can be used to describe the hazardous waste.

EXAMPLE FOR COMPLETING ITEM IV *(shown in line numbers X-1, X-2, X-3, and X-4 below)* – A facility will treat and dispose of an estimated 900 pounds per year of chrome shavings from leather tanning and finishing operation. In addition, the facility will treat and dispose of three non–listed wastes. Two wastes are corrosive only and there will be an estimated 200 pounds per year of each waste. The other waste is corrosive and ignitable and there will be an estimated 100 pounds per year of that waste. Treatment will be in an incinerator and disposal will be in a landfill.

LINE NO.	A. EPA HAZARD. WASTE NO. (enter code)	B. ESTIMATED ANNUAL QUANTITY OF WASTE	C. UNIT OF MEASURE (enter code)	D. PROCESSES 1. PROCESS CODES (enter)	D. PROCESSES 2. PROCESS DESCRIPTION (if a code is not entered in D(1))
X-1	K054	900	P	T03 D80	
X-2	D002	400	P	T03 D80	
X-3	D001	100	P	T03 D80	
X-4	D002				included with above

Continued from page 2.
NOTE: Photocopy this page before completing if you have more than 26 wastes to list.

Form Approved OMB No. 158-S80004

EPA I.D. NUMBER (enter from page 1)	FOR OFFICIAL USE ONLY
W C A T 0 0 0 6 1 7 4 0 7 — 1	W DUP — 2 DUP

IV. DESCRIPTION OF HAZARDOUS WASTES (continued)

LINE NO.	A. EPA HAZARD. WASTE NO. (enter code)	B. ESTIMATED ANNUAL QUANTITY OF WASTE	C. UNIT OF MEASURE (enter code)	D. PROCESSES 1. PROCESS CODES (enter)	D. PROCESSES 2. PROCESS DESCRIPTION (if a code is not entered in D(1))
1	D002	340	T	S04	
2	K048	230	T	S02	
3	K051	82	T	T04	
4	K048	230	T	T01	
5	D003	Spill Potential Only	T	T04	T04 - Refer to Line #3, III B
6	K049	Spill Potential Only	T	T04 T01 S02 T04	T04 - Refer to Line Nos. 3 & 5 III B.
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					
26					

IV. DESCRIPTION OF HAZARDOUS WAS (continued)

E. USE THIS SPACE TO LIST ADDITIONAL PROCESS CODES FROM ITEM D(1) ON PAGE 3.

EPA I.D. NO. (enter from page 1)

F	C	A	T	0	0	0	6	1	7	4	0	7	T/A	6

V. FACILITY DRAWING

All existing facilities must include in the space provided on page 5 a scale drawing of the facility *(see instructions for more detail)*.

VI. PHOTOGRAPHS

All existing facilities must include photographs *(aerial or ground—level)* that clearly delineate all existing structures; existing storage, treatment and disposal areas; and sites of future storage, treatment or disposal areas *(see instructions for more detail)*.

VII. FACILITY GEOGRAPHIC LOCATION

LATITUDE (degrees, minutes, & seconds)	LONGITUDE (degrees, minutes, & seconds)
38 01 43 N	122 16 26 W

VIII. FACILITY OWNER

☒ A. If the facility owner is also the facility operator as listed in Section VIII on Form 1, "General Information", place an "X" in the box to the left and skip to Section IX below.

B. If the facility owner is not the facility operator as listed in Section VIII on Form 1, complete the following items:

1. NAME OF FACILITY'S LEGAL OWNER	2. PHONE NO. (area code & no.)
E	

3. STREET OR P.O. BOX	4. CITY OR TOWN	5. ST.	6. ZIP CODE
F	G		

IX. OWNER CERTIFICATION

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this and all attached documents, and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

A. NAME (print or type)	B. SIGNATURE	C. DATE SIGNED
K.T. PALMER	K T Palmer	11/19/80

X. OPERATOR CERTIFICATION

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this and all attached documents, and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

A. NAME (print or type)	B. SIGNATURE	C. DATE SIGNED
K.T. PALMER	K T Palmer	11/19/80

Please print or type with ELITE type (12 characters/inch) in the unshaded areas only.

Form Approved OMB No. 158-S79016
GSA No. 0246-EPA-OT

EPA

U.S. ENVIRONMENTAL PROTECTION AGENCY

NOTIFICATION OF HAZARDOUS WASTE ACTIVITY

INSTALLATION'S EPA I.D. NO.

I. NAME OF INSTALLATION

II. INSTALLATION MAILING ADDRESS

III. LOCATION OF INSTALLATION

PLEASE PLACE LABEL IN THIS SPACE

INSTRUCTIONS: If you received a preprinted label, affix it in the space at left. If any of the information on the label is incorrect, draw a line through it and supply the correct information in the appropriate section below. If the label is complete and correct, leave Items I, II, and III below blank. If you did not receive a preprinted label, complete all items. "Installation" means a single site where hazardous waste is generated, treated, stored and/or disposed of, or a transporter's principal place of business. Please refer to the INSTRUCTIONS FOR FILING NOTIFICATION before completing this form. The information requested herein is required by law *(Section 3010 of the Resource Conservation and Recovery Act).*

DETACH

FOR OFFICIAL USE ONLY

COMMENTS: C

INSTALLATION'S EPA I.D. NUMBER	APPROVED	DATE RECEIVED (yr., mo., & day)
S F C A T 0 0 0 6 1 7 4 0 7 T/A C 1		

I. NAME OF INSTALLATION

PACIFIC REFINING COMPANY

II. INSTALLATION MAILING ADDRESS

STREET OR P.O. BOX: 3 P O B O X 6 8

CITY OR TOWN	ST.	ZIP CODE
4 H E R C U L E S	C A	9 4 5 4 7

III. LOCATION OF INSTALLATION

STREET OR ROUTE NUMBER: 5 S A N P A B L O A V E N U E

CITY OR TOWN	ST.	ZIP CODE
6 H E R C U L E S	C A	9 4 5 4 7

IV. INSTALLATION CONTACT

NAME AND TITLE (last, first, & job title)	PHONE NO. (area code & no.)
2 Harrington, Ray Sr Envr Engr	4 1 5 - 7 9 9 - 6 6 0 0

V. OWNERSHIP

DETACH

A. NAME OF INSTALLATION'S LEGAL OWNER: 8 Pacific Refining Company

B. TYPE OF OWNERSHIP (enter the appropriate letter into box): M

F = FEDERAL
M = NON-FEDERAL

VI. TYPE OF HAZARDOUS WASTE ACTIVITY (enter "X" in the appropriate box(es))

- [X] A. GENERATION
- [ ] B. TRANSPORTATION (complete item VII)
- [X] C. TREAT/STORE/DISPOSE
- [ ] D. UNDERGROUND INJECTION

VII. MODE OF TRANSPORTATION (transporters only – enter "X" in the appropriate box(es))

- [ ] A. AIR
- [ ] B. RAIL
- [ ] C. HIGHWAY
- [ ] D. WATER
- [ ] E. OTHER (specify):

VIII. FIRST OR SUBSEQUENT NOTIFICATION

Mark "X" in the appropriate box to indicate whether this is your installation's first notification of hazardous waste activity or a subsequent notification. If this is not your first notification, enter your installation's EPA I.D. Number in the space provided below.

- [ ] A. FIRST NOTIFICATION
- [X] B. SUBSEQUENT NOTIFICATION (complete item C)

C. INSTALLATION'S EPA I.D. NO.: C A T 0 0 0 6 1 7 4 0 7

IX. DESCRIPTION OF HAZARDOUS WASTES

Please go to the reverse of this form and provide the requested information.

EPA Form 8700-12 (6-80)

CONTINUE ON REVERSE

I.D. – FOR OFFICIAL USE ONLY

S												T/R	C
W													1
1	2										13	14	15

IX. DESCRIPTION OF HAZARDOUS WASTES *(continued from front)*

A. HAZARDOUS WASTES FROM NON–SPECIFIC SOURCES. Enter the four–digit number from 40 CFR Part 261.31 for each listed hazardous waste from non–specific sources your installation handles. Use additional sheets if necessary.

1	2	3	4	5	6
7	8	9	10	11	12

B. HAZARDOUS WASTES FROM SPECIFIC SOURCES. Enter the four–digit number from 40 CFR Part 261.32 for each listed hazardous waste from specific industrial sources your installation handles. Use additional sheets if necessary.

13	14	15	16	17	18
K048	K049	K050	K051	K052	
19	20	21	22	23	24
25	26	27	28	29	30

C. COMMERCIAL CHEMICAL PRODUCT HAZARDOUS WASTES. Enter the four–digit number from 40 CFR Part 261.33 for each chemical substance your installation handles which may be a hazardous waste. Use additional sheets if necessary.

31	32	33	34	35	36
37	38	39	40	41	42
43	44	45	46	47	48

D. LISTED INFECTIOUS WASTES. Enter the four–digit number from 40 CFR Part 261.34 for each listed hazardous waste from hospitals, veterinary hospitals, medical and research laboratories your installation handles. Use additional sheets if necessary.

49	50	51	52	53	54

E. CHARACTERISTICS OF NON–LISTED HAZARDOUS WASTES. Mark "X" in the boxes corresponding to the characteristics of non–listed hazardous wastes your installation handles. *(See 40 CFR Parts 261.21 – 261.24.)*

☐ 1. IGNITABLE (D001) ☐ 2. CORROSIVE (D002) ☒ 3. REACTIVE (D003) ☐ 4. TOXIC (D000)

X. CERTIFICATION

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this and all attached documents, and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

SIGNATURE	NAME & OFFICIAL TITLE *(type or print)*	DATE SIGNED
K.T. Palmer	K.T. PALMER, Vice President	2/17/81

DETACH A

EPA

POTENTIAL HAZARDOUS WASTE SITE IDENTIFICATION

REGION: IX | SITE NUMBER: 10032

NOTE: The initial identification of a potential site or incident should not be interpreted as a finding of illegal activity or confirmation that an actual health or environmental threat exists. All identified sites will be assessed under the EPA's Hazardous Waste Site Enforcement and Response System to determine if a hazardous waste problem actually exists.

A. SITE NAME: Pacific Refining Co.

B. STREET (or other identifier): PO Box 68, Hercules Ca

C. CITY: Hercules

D. STATE: Ca.

E. ZIP CODE: 94547

F. COUNTY NAME: Contra Costa

G. OWNER/OPERATOR (if known)

1. NAME: Same

2. TELEPHONE NUMBER: NONE

H. TYPE OF OWNERSHIP (if known)

☐ 1. FEDERAL ☐ 2. STATE ☐ 3. COUNTY ☐ 4. MUNICIPAL ☑ 5. PRIVATE ☐ 6. UNKNOWN

I. SITE DESCRIPTION

Oil Refinery with 3 surface impoundments

J. HOW IDENTIFIED (i.e., citizens complaints, OSHA citations, etc.): WQCB #6

K. DATE IDENTIFIED (mo., day, & yr.): 9/79

L. SUMMARY OF POTENTIAL OR KNOWN PROBLEM

Toxic liquids and sludges
corrosive liquids and sludges

M. PREPARER INFORMATION

1. NAME: Anna M. Gabriel

2. TELEPHONE NUMBER: (415) 556-8068

3. DATE (mo., day, & yr.): 6/19/80

EPA Form 2070-3 (5-80)

Continued From Page 2

V. WASTE RELATED INFORMATION (continued)

3. LIST SUBSTANCES OF GREATEST CONCERN WHICH MAY BE ON THE SITE (place in descending order of hazard).

Chlorides
Metals
Acids

4. ADDITIONAL COMMENTS OR NARRATIVE DESCRIPTION OF SITUATION KNOWN OR REPORTED TO EXIST AT THE SITE.

VI. HAZARD DESCRIPTION

A. TYPE OF HAZARD	B. POTENTIAL HAZARD (mark 'X')	C. ALLEGED INCIDENT (mark 'X')	D. DATE OF INCIDENT (mo., day, yr.)	E. REMARKS
1. NO HAZARD				
2. HUMAN HEALTH				
3. NON-WORKER INJURY/EXPOSURE				
4. WORKER INJURY				
5. CONTAMINATION OF WATER SUPPLY				
6. CONTAMINATION OF FOOD CHAIN				
7. CONTAMINATION OF GROUND WATER				
8. CONTAMINATION OF SURFACE WATER	X			Surface waters is apx 9 meters from site - run off from site could contaminate the surface water
9. DAMAGE TO FLORA/FAUNA				
10. FISH KILL				
11. CONTAMINATION OF AIR				
12. NOTICEABLE ODORS				
13. CONTAMINATION OF SOIL				
14. PROPERTY DAMAGE				
15. FIRE OR EXPLOSION	X			
16. SPILLS/LEAKING CONTAINERS/ RUNOFF/STANDING LIQUIDS				
17. SEWER, STORM DRAIN PROBLEMS				
18. EROSION PROBLEMS				
19. INADEQUATE SECURITY				
20. INCOMPATIBLE WASTES				
21. MIDNIGHT DUMPING				
22. OTHER (specify):				Interceptor wells are within the area

Continued From Front

VII. PERMIT INFORMATION

A. INDICATE ALL APPLICABLE PERMITS HELD BY THE SITE.

- [X] 1. NPDES PERMIT
- [ ] 2 SPCC PLAN
- [X] 3. STATE PERMIT (specify): CA 0005096 and 2-78-48
- [ ] 4. AIR PERMITS
- [ ] 5. LOCAL PERMIT
- [ ] 6. RCRA TRANSPORTER
- [ ] 7 RCRA STORER
- [ ] 8 RCRA TREATER
- [ ] 9. RCRA DISPOSER
- [ ] 10. OTHER (specify): _____

B. IN COMPLIANCE?

- [ ] 1. YES
- [ ] 2. NO
- [X] 3. UNKNOWN

4. WITH RESPECT TO (list regulation name & number): _____

VIII. PAST REGULATORY ACTIONS

- [ ] A. NONE
- [ ] B. YES (summarize below)

Unknown

IX. INSPECTION ACTIVITY (past or on-going)

- [ ] A NONE
- [ ] B. YES (complete items 1,2,3, & 4 below)

Unknown

1. TYPE OF ACTIVITY	2 DATE OF PAST ACTION (mo., day, & yr.)	3 PERFORMED BY (EPA/State)	4. DESCRIPTION

X. REMEDIAL ACTIVITY (past or on-going)

- [ ] A. NONE
- [ ] B. YES (complete items 1, 2, 3, & 4 below)

Unknown

1. TYPE OF ACTIVITY	2. DATE OF PAST ACTION (mo., day, & yr.)	3. PERFORMED BY: (EPA/State)	4. DESCRIPTION

NOTE: Based on the information in Sections III through X, fill out the Preliminary Assessment *(Section II)* information on the first page of this form.

SITE DATA

EPA ID NO.: CAT000617407 SHEET 01

****

(ACTION : *__* - FOR DATA ENTRY USE ONLY)

SF ID: *___* *___* *___* SITE NAME: PACIFIC REFINING CO SOURCE: S SOURCE COUNTS:

___ *___* STREET: SAN PABLO AVE CONG. DIST: 07 NOTIS: 0

NATL PRIORITY: N CITY: HERCULES ST: CA ZIP: 94547-_____ STS: 1

HRS: *____.__* CNTY NAME: CONTRA COSTA CNTY CODE: 013 HWDMS: 0

HRS DATE (YY/MM): *___/___* LATITUDE: 38/01/25.0 LONGITUDE: 122/16/10.0 COMPOSITE: 0

RESPONSE TERMINATION (CHECK ONE IF APPLICABLE): PENDING *__* NO FURTHER ACTION *__* OTHER: 0

ENF. DISP. (CHECK ANY THAT APPLY): NO VIABLE RESP. PARTY *__* VOL. RESP. *__* ENF. RESP. *__* COST RECOV. *__*

RSPO NAME: *_____* RSPO PHONE: *____-____-_____* FED. FAC. (Y/N): N NON-SITE: *__*

SMSA: 7360 USGS HYDRO. UNIT: 18050002 REG. FLD1: *_____* REG. FLD2: Y

SITE DESCRIPTION: *_____*

_____

_____

_____

EVENTS

******

	(ACTION - FOR DATA ENTRY USE ONLY)		EVENT TYPE	DATE (YY/MM) STARTED	DATE (YY/MM) COMPLETED	CONDUCTED BY - EPA	STATE	RESP/PARTY	OTHER	COUNTS
RESPONSE EVENTS	*__*	(X)	SITE DISCOVERY (SD)		79/09					
	__	(X)	PRELIMINARY ASSESSMENT (PA)	*___/___*	80/06	*__*	*__*			
	__		SITE INVESTIGATION (SI)	*___/___*	*___/___*	*__*	*__*			
	__		REMEDIAL ACTION (RD)	*___/___*	*___/___*	*__*	*__*	*__*	*__*	*___*
	__		REMOVAL ACTION (RV)	*___/___*	*___/___*	*__*	*__*	*__*	*__*	*___*
ENFORCE. EVENTS	*__*		ENFORCEMENT INVESTIGATION (EI)	*___/___*	*___/___*	*__*	*__*		*__*	
	__		ADMINISTRATIVE ORDER (AO)	*___/___*	*___/___*	*__*	*__*		*__*	
	__		JUDICIAL ACTION (JA)	*___/___*	*___/___*	*__*	*__*		*__*	

SITE NAME: PACIFIC REFINING CO

ALIAS AND ALIAS LOCATION DATA
****

ALIAS (ACTION *__* - FOR DATA ENTRY USE ONLY)

SEQ. NO.: *___* ALIAS NAME: *_____* SOURCE: *__*

ALIAS LOCATION (ACTION *__* - FOR DATA ENTRY USE ONLY)

CONTIGUOUS PORTION OF SITE: *__*

STREET: *_____* CONG. DIST.: *___*

CITY: *_____* ST: *___* ZIP: *_____-_____*

CNTY NAME: *_____* CNTY CODE: *____*

LAT: *___/___/___.__* LONG.: *____/___/___.__* SMSA: *_____* USGS HYDRO. UNIT: *_____*

ALIAS (ACTION *__* - FOR DATA ENTRY USE ONLY)

SEQ. NO.: *___* ALIAS NAME: *_____* SOURCE: *__*

ALIAS LOCATION (ACTION *__* - FOR DATA ENTRY USE ONLY)

CONTIGUOUS PORTION OF SITE: *__*

STREET: *_____* CONG. DIST.: *___*

CITY: *_____* ST: *___* ZIP: *_____-_____*

CNTY NAME: *_____* CNTY CODE: *____*

LAT: *___/___/___.__* LONG.: *____/___/___.__* SMSA: *_____* USGS HYDRO. UNIT: *_____*

SITE NAME: PACIFIC REFINING CO

SITE COMMENTS
****

(ACTION - FOR DATA ENTRY USE ONLY)	COMMENT NUMBER	COMMENT
	001	PA (80/06/16) INDICATES HIGH APPARENT SERIOUSNESS OF PROBLEM AND
	002	SITE INSPECTION NECESSARY

EPA ID NO.: CAT000617407 SHEET 04

SITE NAME: PACIFIC REFINING CO

REGIONAL ENTRIES
****

(ACTION - FOR DATA ENTRY USE ONLY)	ENTRY CODE	DESCRIPTION	DATE1 (YY/MM/DD)	DATE2 (YY/MM/DD)	DATE3 (YY/MM/DD)	FREE FIELD
__	HSCA.01	ACIDS				
__	HSCO.01	OILY WASTES				
__	HSCS.01	SOLVENTS				
__	HSC3.01	OTHER:ALUMINUM SLUDGE, REACTIVE WASTES				
__	OPDS.01	IMPOUNDMENT				
__	9CA1.01	NORTH				
__	9EV1.01	NEEDS ACTION	80/ 06/ 16			
__	9RCR.01	RCRA (MAJOR) REGULATED:GENERATOR, TSD FACILITY (NON HANDLER) SEE NOTIF & PART A FILE				
__	*____.___*					
__	*____.___*					
__	*____.___*					
__	*____.___*					
__	*____.___*					
__	*____.___*					

Pacific Refining Company
a subsidiary of The Coastal Corporation
P.O. Box
Hercules, California 94547
(415) 799-8000

August 14, 1987

Ms. Laura Hughes
California Regional Water Quality Control Board
San Franicsco Bay Region
1111 Jackson Street, Room 6040
Oakland, CA 94607

Re: SPCC Plan for Pacific Refinery

Dear Ms. Hughes:

As requested, please find attached a copy of Pacific Refining Company's Spill Prevention Control and Countermeasure Plan (SPCC) for the Hercules Refinery. I have also enclosed the "Table of Contents" section from our much larger "Oil Spill Contingency Plan" which is periodically revised and updated. This document is available for on-site review at the refinery during normal working hours, 7:30 a.m. to 4:00 p.m., Monday through Friday.

If you need any additional information, please give me a call.

Sincerely,

PACIFIC REFINING COMPANY

C A Wheeler

C. Alan Wheeler
Process Engineering Manager

CAW/llw

Attachment

SPILL CONTROL AND COUNTERMEASURE PLAN

FOR

PACIFIC REFINING COMPANY

HERCULES REFINERY

GENERAL INFORMATION

Facility

Name:	Pacific Refining Company, Hercules Refinery
Type:	Onshore Refining Facility
Location:	City of Hercules in Contra Costa County, California; San Pablo Avenue near Rodeo
Age:	Refinery was constructed in 1966-67

Operator

Name:	Pacific Refining Company
Address:	P.O. Box 68, Hercules, California 94547
Phone:	(415) 799-8000

Material Stored in Facility

Type:	Crude oil, fuel oil, middle distillate, gasoline, propane, butane

Designated Person Accountable for Oil Spill Prevention at Facility

Name:	S. A. Kalota
Title:	Operations Manager

FACILITY DRAINAGE

Drainage from Diked Storage

Drainage from diked storage areas is restrained by valves to prevent a spill or other excessive leakage of oil into the drainage system or inplant effluent treatment system. Diked areas may be emptied by portable pumps which are manually activated and the condition of the accumulation is examined before starting to be sure no oil will be discharged. Valves used for drainage are of the manual, open-and-closed design. Each valve is secured by a chain and padlock. Keys are retained by the foreman who has administrative control over use of these valves.

All storage tanks are diked. (Feedstocks and products).

Drainage from Undiked Areas

Drainage from undiked areas flows into a catchment basin (with weir and straw filter) designed to collect and retain any oil in contaminated runoff. All inplant ditches drain into this basin. Collected oil is easily recovered if a discharge happens to occur.

Drainage of Rainwater from Secondary Containment

Rainwater drained from secondary containment is not directed into an open watercourse. It is directed into a catchment basin (with weir and straw filter) or a closed catchment basin and is monitored for compliance with applicable water quality standards before being discharged to San Pablo Bay.

A record of inspection and drainage events is not considered necessary since drainage does not directly enter an open water-course.

SECURITY

Entrance

The refinery property is fully fenced and entrance gates are locked and/or guarded 24 hours a day. Identification badges are necessary for admittance to the facility.

Operating Controls

Valves which permit direct outward flow of a tank's contents are blank-flanged when in non-operating status.

Starter controls on all oil pumps in non-operating or standby status are located at sites accessible only to refinery personnel.

Lighting

Plant processing units, storage tanks, piping, drainage systems and waste treatment units are all well lighted. Any oil discharge occurring during hours of darkness can be discovered by operating personnel.

STATE OF CALIFORNIA
GEORGE DEUKMEJIAN, Governor

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION
1111 JACKSON STREET, ROOM 6040
OAKLAND 94607

Phone: Area Code 415
464-1255

February 2, 1987

File No. 2119.1061(LAH)

Mr. S.D. Ricks
Vice President
Pacific Refining Company
P.O. Box 68
Hercules, California 94547

Dear Mr. Ricks:

Attached is a copy of Pacific Refining's Self-Monitoring Program (SMP) as adopted by the Board at the January 21, 1987 Board Meeting. At this meeting we informed the Board of your request for a 30-day extension in order to comment on the proposed stormwater allocation method. In addition, staff proposed to bring this item for Board adoption at the March 18th Board Meeting. Please submit your comments no later than February 18, 1987.

Staff will also propose for Board adoption at the March 18th Board Meeting to further amend your SMP to include the new Part A and Standard Provisions. This Part A and Standard Provisions were recently adopted by the Board at the December 17, 1986 Board Meeting. Attached is a copy of this Part A and Standard Provisions for your review and comment. Please submit your comments no later than February 18, 1987.

If you have any questions or require additional information please contact Laura Hughes at (415) 464-4264.

Sincerely,

Roger B. James

ROGER B. JAMES
Executive Officer

cc: Alan Wheeler, Senior Engineer
Pacific Refining

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

AMENDED
SELF- MONITORING PROGRAM
FOR

PACIFIC REFINING COMPANY

HERCULES

CONTRA COSTA COUNTY

NPDES NO. CA 0005096

ORDER NO. 85-30

CONSISTS OF

PART A, dated January 1978

AND

PART B

PART B

I. DESCRIPTION OF SAMPLING STATIONS

A. EFFLUENT

Station	Description
E-001	At any point in the outfall from the treatment facilities between the point of discharge and the point at which all waste tributary to that outfall is present.
E-001-D	At any point in the disinfection facilities for Waste E-001, at which point all sewage tributary there to is present and adequate contact with the disinfectant is assured. (May be the same as E-001).
E-002	At any point in the bypass at which all waste tributary to that outfall is present.
E-003	At any point in the bypass at which all waste tributary to that outfall is present.

B. RECEIVING WATERS

Station	Description
C-A-0	Background station, 100 feet upstream of diffuser section.
C-A-1	10 feet downstream of center port.
C-A-2	60 feet downstream of center port.
C-A-3	120 feet downstream of center port.
C-R-1	At a point in San Pablo Bay, located approximately 3000 feet northeasterly from the geometric center of the diffuser system for Outfall 001.
C-R-2	At a point in San Pablo Bay, located approximately 3000 feet westerly from the geometric center of the diffuser system for Outfall 001.

II. MISCELLANEOUS REPORTING

A. The discharger shall record the rainfall on each day of the month.

B. The discharger will be allowed to continue using its present stormwater runoff/ballast water allocation method until the Executive Officer or the Board adopts Board staff proposed method or an equivalent bankbook method. A description of the method presently used by the discharger shall be included in its self-monitoring reports. The daily maximum allocation must be computed for each day Waste 001 is monitored.

C. The discharger shall retain and submit (when required) the following information concerning the monitoring program for organic and metallic pollutants.

a. Description of sample stations, times, and procedures.

b. Description of sample containers, storage, and holding time prior to analysis.

c. Quality assurance procedures together with any test results for replicate samples, sample blanks, and any quality assurance tests, and the recovery percentages for the internal and surrogate standards.

D. The discharger shall submit in the monthly self-monitoring report the metallic & organic test results together with the detection limits (including unidentified peaks). All unidentified (non-Priority Pollutants) peaks detected in the EPA 624 and 625 test methods shall be identified and semi-quantified. Hydrocarbons detected at ≤ 10 ug/l based on the nearest internal standard may be appropriately grouped and identified together as aliphatic hydrocarbons, aromatic hydrocarbons, and unsaturated hydrocarbons. All other hydrocarbons detected at >10 ug/l based on the nearest internal standard shall be identified and semi-quantified.

Note that you may submit your metallic monitoring results in your regular self-monitoring reports or in a separate report within thirty days of the end of each month, as long as you indicate in your regular monthly monitoring report that the metals results will be reported in this separate report.

E. Ballast water treated and discharged as part of Waste 001 shall be metered and the volume recorded in the self-monitoring report for each calendar day. The 30-day average shall be the sum of the daily values in a calendar month divided by the number of days in that month. Ballast-water allocations shall be calculated by multiplying the volume of ballast water, determined above by the appropriate concentration listed under Effluent Limitation A.2. in the permit.

III. SCHEDULE OF SAMPLING AND ANALYSIS

A. The schedule of sampling and analysis shall be that given in Table 1 (attached).

B. Sample collection, storage, and analysis shall be performed according to the latest 40 CFR Part 136 or othermethods approved and specified by the Executive Officer of this Regional Board.

IV. MODIFICATIONS TO PART A

Exclude paragraph E.4.

I, Roger B. James, Executive Officer, hereby certify that the foregoing Self-Monitoring Program:

1. Has been developed in accordance with the procedure set forth in this Regional Board's Resolution No.73-16 in order to obtain data and document compliance with waste discharge requirements established in Regional Board Order No.85-30.

2. Is effective on the date shown below.

3. May be reviewed at any time subsequent to the effective date upon written notice from the Executive Officer or request from the discharger and revisions will be ordered by the Executive Officer or Regional Board.

Roger B. James

ROGER B. JAMES
EXECUTIVE OFFICER

Effective Date FEBRUARY 5, 1987

Attachments:
Table 1
Form A

Pacific Refining Company
a subsidiary of The Coastal Corporation
P.O. Box 68
Hercules, California 94547
415/799-6600

January 6, 1986

Certified P-535-253-038
Return Receipt Requested

Mr. Philip L. Bobel
Chief, Waste Programs Branch
U.S. Environmental Protection Agency
Region 9
215 Fremont Street
San Francisco, CA 94105

RE: Report of Sampling/Analysis Results for Sediment in Biological Treatment Lagoon at Pacific Refining Company

Dear Mr. Bobel:

The enclosed submittal is the project report summarizing the results of the approved sampling/analysis program specified in our letters of 4/23/85 and 5/31/85. As you know, this program was recently undertaken at Pacific Refining Company's wastewater biological treatment lagoon to characterize the bottom sediment deposits with regard to the RCRA definintion of "hazardous waste". As explained earlier, this biological lagoon receives wastewater which has already undergone API oil/water gravity separation and flocculation/air floatation. It also receives a small amount of pre-treated sanitary waste. The refinery effluent wastewater undergoes aggressive biological treatment in this lagoon as the final treatment step prior to discharge to San Pablo Bay. The data summarized in Tables 1 and 2 supports Pacific's contention that this wastewater treatment lagoon should not be subject to regulation as a hazardous waste surface impoundment. The eight specific additional information items requested in attachment "A" of your 10/30/85 letter are provided in the following sequentially by item number.

ATTACHMENT "A" - ITEMS REQUESTED

Item 1

A tabular summary of the test results is shown in Table 1 for the parameters pertinent to RCRA regulation. This data shows the sediment to be far below the regulatory limits which are also presented in the table for pH, ignitability, and EP toxicity. The average sulfide concentration was also well under the proposed regulation level, but bears some additional discussion.

This impoundment is expressly exempt from California regulation since it constitutes a biological process, the discharge of which is subject to a permit issued pursuant to Section 402 of the Federal Water Pollution Control Act. Nevertheless, testing for "CAM" metals was also performed on an eight location composite to alleviate any potential concerns regarding the California exemption. The results of the CAM total metals analysis and CAM WET extraction results are shown in Table 2, along with the California TTLC and STLC regulatory limits. This also confirms that toxic metals concentrations, as defined in California, are far below regulation thresholds. The report sheets provided by Brown and Caldwell Laboratories are also attached for your information.

Since two of the eight sulfide results obtained were above the proposed limit of 500 mg/kg, a rigorous statistical analysis was performed to predict the proper conclusion which should be drawn regarding the total pond contents sludge characteristics. The average of all data points analyzed was 364 mg/kg sulfide, which is well below the proposed limit. Further evaluation of the data showed an abnormal data distribution, which would result in rejection of both high data points as "outliers" when subjected to the "Dixon Criterion"(1) for a 90% confidence interval. Figure 1 shows the statistical analysis parameters without these two data points. The important statistical values, the mean of 157 mg/kg and a confidence interval of 224.8 are far below the limit. Please note that in Figure 2 the same statistical analysis is performed excluding <u>just</u> the highest outlier data point with results of a 230 mg/kg mean and a confidence interval of 349.7, again well below the regulatory level.

<u>Items 2, 3, 4</u>

The sampling and analysis program was implemented as outlined in detail in our letters of 4/23/85 and 5/31/85, except as noted in the attached letter of 12/31/85 sent to us by Reed Larson, the Field Services Coordinator of Brown and Caldwell Laboratories. Brown and Caldwell Laboratories performed the required analyses and Mr. Larson also participated in the actual sampling. The chain of custody records and sampling apparatus details are included in his report.

(1) Dixon Criterion "as presented in the National Bureau of Standards, "Quality Assurance of Chemical Measurements", 1984, page III-32

Item 5 .

Although previous notification of treatment storage and disposal activities was originally filed as a protective measure for Pacific's wastewater treatment facilities, it has been our opinion that Pacific does not properly fall into that category. The water treatment facility and its discharge is subject to an NPDES permit issued pursuant to Section 402 of the Federal Water Pollution Control Act. As best we can determine based on interpretive guidance documents available to us at this time, Pacific does not manage listed RCRA hazardous waste (as defined in 40 CFR Part 261, Subpart D) in its operation at the Hercules Refinery other than as a generator with an on-site storage period of less than 90 days.

Item 6 - Management of Listed Hazardous Waste from Specific Sources (Section 261.31)

(K048), DAF float is generated in a "tank unit" during the final flocculation step ahead of the biological treatment lagoon. DAF float is skimmed to a trough and flows through a steel pipe to tank 837 (capacity 12,600 gal.) where it is stored less than 90 days before removal for off-site disposal at a Class 1 permitted facility.

(K049), Slop oil emulsion solids are generated periodically whenever a slop oil tank is cleaned. The slop oil removed from the wastewater flow in the API separator units is collected in a tank and returned to the refinery process units for reprocessing. The solids from a tank cleaning operation would be disposed directly to a Class 1 facility.

(K050), Heat exchanger bundle cleaning sludge is also generated only infrequently whenever this cleaning operation occurs. Bundle cleaning is accomplished with a water jet in a cement lined cleaning pad area. Water and exchanger solids flow to a dedicated (above ground) rectangular tank where settling of the solids occurs. The water is removed and treated in the wastewater facilities, the solids are then removed to a Class 1 disposal site.

(K051), API separator sludge which settles on the API tank bottoms is continuously scraped toward the inlet end by chain driven scraper bars. This accumulation is removed by vacuum truck on a routine basis from the integral hopper-accumulator in the south end. This sludge is then either taken directly to a Class 1 dumpsite or added to the contents of Tank 837 (with K048) depending on the quantity and water content.

(K052). Leaded tank bottoms are generated only infrequently when a leaded gasoline tank is cleaned to accomplish repair or to change service. Whenever this would occur, the tank bottoms would be taken directly to a Class 1 facility for treatment and disposal.

Based on observations by refinery personnel, the dewatering operations which may occur on DAF float and/or API separator sludge and heat exchanger sludge for waste volume reduction are closely controlled to prevent inclusion of listed hazardous waste in the wastewater returned to the API separator. Similarily water incidentally removed with the oil skim from the APIs is returned to the API inlet.

Item 7

The wastewater treated at the Pacific Refinery is not and is not mixed with any of the hazardous waste from non-specific sources listed in Subpart D, 40 CFR, 261.31 (spent solvents and various sludges and baths) or discarded chemical products listed in Section 261.33. Should any such listed commercial chemical product used in processing or laboratory testing be found to be off specification and unusable, it would be properly disposed of at a Class 1 facility. To the extent that small quantities of certain Section 261.33 chemicals may be utilized in laboratory tests, this stream would still be exempted since the annualized average laboratory wastewater flow would not exceed 1% of the total effluent to the headworks of the wastewater treatment facilities.

From the enclosed information, and analyses previously submitted to the Department of Health Services (letter of 6/8/84) characterizing the DAF outlet water, we have concluded that both the wastewater entering Pacific's biological treatment pond and the bottom sediment accumulation are not "hazardous waste" under RCRA section 3001 regulation, and therefore, the biological treatment lagoon is not subject to RCRA section 3002 regulations in 40 CFR Part 265. If the EPA and DOHS concur with this conclusion, Pacific would submit a revised Part "A" application to reflect our proper status. Please advise us if any other specific forms or documents are required for such an admendment. If you have any questions or require any additional information, please contact me or Alan Wheeler at (415) 799-6600.

Item 8 , Certification

I certify that I am familiar with the information in this report, and to the best of my knowledge and belief, this information is true, complete, and accurate.

Very truly yours,

PACIFIC REFINING COMPANY

S. D. Ricks
Refinery Manager

SDR/CAW/lw

Attachments

cc: Charlene Williams - DOHS-Berkeley
Tom Mumley - CRWQCB-Oakland

Pacific Refining Company
P O Box 68
Hercules, California 94547

May 12, 1981

U.S. Environmental Protection Agency
Region IX
215 Fremont Street
San Francisco, CA 94105

RCRA Permit ID #CAT000617407

Gentlemen:

This letter is to amend Part III, Processes - Codes and Design Capacities, Form 3 of Part A - Hazardous Waste Permit Application (EPA Form 3510-3) which was transmitted as a part of Pacific Refining Company's original RCRA Permit Application dated November 18, 1980.

Please refer to Item 1, Part III of Form 3. A process code number of S04 was listed along with a process design capacity of 187,000 gallons for a surface impoundment. After reviewing our operational practices and sampling analysis, we have concluded that this item listed is not a hazardous waste storage facility.

This surface impoundment is a concrete lined, caustic evaporation pond. We previously were concerned that at certain times this pond could receive alkaline waters which might exhibit the characteristic of corrosivity, having a pH equal to or greater than 12.5. A pH of 12.5 would make it a storage facility for a hazardous waste stream under RCRA Regulations, Section 261.22. Since filing the Part A Application in November of 1980, we have determined that this pond does not receive alkaline waters of 12.5 pH or greater and that no sludges are generated that would meet the criteria under Section 261.22.

We therefore request that Form 3 of the Part A Application be amended to exclude Item 1 of Part III.

If you have any questions regarding this matter, please feel free to call Ray Harrington at 415 799-6600.

Sincerely,

K. T. Palmer
Vice President

dm

RECORD OF COMMUNICATION

☒ PHONE CALL ☐ DISCUSSION ☐ FIELD TRIP ☐ CONFERENCE
☐ OTHER (SPECIFY)

(Record of item checked above)

TO: Wallace Red

FROM: Troy Webb
- works with Pat Shanks

DATE 11/14/84

TIME 2:30pm

SUBJECT: Pacific Refining

SUMMARY OF COMMUNICATION

Mr. Webb called about the impoundments downstream of API separators. He was fishing for more information. He will get a letter off to EPA very soon.

Dan,
Please file this telephone ROC in the PAC REF Filt. Thanks! WR

CONCLUSIONS, ACTION TAKEN OR REQUIRED

INFORMATION COPIES TO: Pacific Refining File / Refinery File

EPA Form 1300-6 (7-72) REPLACES EPA NO. FORM 5300-3 WHICH MAY BE USED UNTIL SUPPLY IS EXHAUSTED.

STATE OF CALIFORNIA—HEALTH AND WELFARE AGENCY

GEORGE DEUKMEJIAN, Governor

DEPARTMENT OF HEALTH SERVICES
714/744 P STREET
SACRAMENTO, CA 95814
(916) 324-2429

1. Shone, T-3-2
2. Reid, T-2-2

November 13, 1984

Harry Seraydarian, Director
Toxic & Waste Management Division
U.S. Environmental Protection Agency
215 Fremont Street
San Francisco, CA 94105

Dear Mr. Seraydarian:

RE: Pacific Refining

EPA in cooperation with the TSCD Berkeley staff has reviewed the above company's waste stream and jointly determine that the company is subject to our mutual regulatory programs. However, your agency has already catagorized this as a major facility, begun the Part B call in process and scheduled inspections.

This is to confirm that it is our understanding that your agency has accepted this matter for enforcement. Please be assured of our full cooperation. Should you desire any information, please contact Charlene Williams of the Regional Staff. In conformity with this understanding, we will not require notices of inspections and violations under Sections 3007 and 3008 of RCRA, but rather, will defer fully to your enforcement authority.

Very truly yours,

GILBERT A. JENSEN
Enforcement Coordinator

GAJ:slc

cc: Charlene Williams; Berkeley
Wallace Reid; EVA
Ms. Pat Shanks; McCutchen,
Doyle, Brown & Enersen

State of California
REGIONAL WATER QUALITY CONTROL BOARD
San Francisco Bay Region

To: Michael D. Drennan
Section Leader

From: Laura A. Hughes
WRC Engineer

Date: November 27, 1987

Subject: Inspection of Pacific Refinery, Hercules, Contra Costa County

On November 24, 1987, Laura Hughes of the Regional Board met with Mr. Alan Wheeler of Pacific Refinery to discuss recent pH and toxicity violations of their NPDES permit.

This memo describes the violations, the causes of the violations, corrective actions taken, and recommendations for enforcement.

VIOLATIONS

On November 8, 1987, Pacific exceeded their effluent pH permit limit (5.2 versus 6.5-8.5) for about 1-1/2 hours.

During this month, Pacific also violated the toxicity requirement in their permit. The permit requires that the survival of threespine stickleback (Gasterosteus aculeatus) and fathead minnow test fishes in 96 hour flow-through bioassays shall achieve a 90 percentile value not less than 50 percent survival based on any ten consecutive samples. Pacific obtained a 90 percentile value of 30 and 0 percent survivals for threespine stickleback and fathead minnow respectively.

It should be noted that during this month, four out of the five stickleback flow through bioassay tests and two out of five fathead minnow flow through bioassay tests showed less than a 50 percent survival (See Attachment A for test results).

CAUSES OF THE VIOLATIONS

PH VIOLATIONS

On November 8, 1987 (Sunday), sometime between 6:00-8:00 am, the shift operator at this Refinery found that the automatic pH control system was not working adequately (this was confirmed through manual pH checks of the effluent that are normally performed by some operators to determine if the pH probe is working in a reliable manner) and since this operator is

-to increase right margin - control OR

75

neither trained to fix this type of probe nor trained to call up a vendor or a supervisor, he decided to control for pH manually (by taking pH samples of the effluent manually every two hours and then adjusting the caustic dosage rate when needed to maintain a pH in the range of 7.0 to 7.5 in the aeration tank). On this date, at about 11:00 pm, there was a change in shift operator and it appears that this operator was not informed of the manual pH control operation and let the pH effluent drop from 7 to 5 (at about midnight), he then checked the caustic addition system and found that the caustic addition pump was not operating properly (blockage in the line). He then manually switched to a second pump. It should be noted that if the automatic pH control system was working properly, this second pump is set on automatically as soon as the first pump fails.

TOXICITY VIOLATIONS

These violations appear to have been caused partly by 1) the pH drop that occurred in the activated sludge system on November 8, 1987, and partly by 2) a malfuntion of the oxidizer unit upstream of the wastewater treatment plant.

The abrupt pH drop that occurred in the activated sludge system (in general pH's are maintained in the range of 6.5 and 7.5, the optimum pH range for growth) may have affected the microorganisms in the system to such an extent that biodegradation of organic compounds in the wastewater was not so effective (this is reflected by the slightly higher than normal concentrations of COD, as measured in composite samples of the effluent).

Sometime during the week of November 14-17, 1987, the air compressor of the oxidizer unit was not working properly (compressor was not achieving its normal discharge pressure) which resulted in a discharge of higher than normal COD concentrations to the wastewater treatment plant. This in turn contributed additional COD to the final effluent which may have affected the fish.

CORRECTIVE ACTION

1) On November 9, 1987, Pacific Refinery took the following actions:

* Repaired the pH probe (this consisted of acid cleaning the electrodes and recalibration of the pH probe) and unplugged the caustic addition pump. The system was back to automatic control operation on this date.

* Called the Regional Board staff to inform them of the pH violation.

* Stopped pumping to the bay for about 12 hours to mitigate any potential impacts to the bay.

2) On November 11, 1987, Pacific Refinery took the following actions:

* Called the Regional Board staff to inform them of the 24-hour flow-through bioassay results (20% and 60% survival for stickleback and fathead minnow, respectively). This test was started on November 10, 1987.

* Stopped pumping to the bay at about 11:30 am.

* Supplemented the activated sludge system with more microorganisms.

3) On November 12th Pacific resume discharging to the bay at about 10 pm.

4) On November 13th Pacific began another flow through bioassay test (34% survival for stickleback and 0% survival for fathead minnow after 96 hours),

5) On November 17th Pacific began another flow-through bioassay test and obtained 30% survival for stickleback and 0% survival for fathead minnow after 24 hours). Stopped discharging to the bay at about 4:00 pm on November 18th.

6)On November 19th Pacific supplemented the activated sludge system with additional microrganisms. Resumed discharging to the bay late in the evening.

7) On November 20th Pacific began another flow-through bioassay test and obtained 84% survival for stickleback and 50% survival for fathead minnow.

8) On November 24th Pacific began another flow-through bioassay test and obtained 98% survival for stickleback and 90% survival for fathead minnow.

9) Pacific took an effluent composite sample on 11/13, 11/18, 11/20, 11/21, 11/22, & 11/23 for analysis of most of the parameters regulated under the NPDES permit. However, on November 14th & 15th, Pacific failed to perform the static bioassay test (LC-50 using at least 4 dilutions) as required in the permit when more than 50% of the test fishes died. (See Attachment B for test results).

It should be noted that Regional Board staff took samples of the effluent on November 20& 24th.

ENFORCEMENT RECOMMENDATIONS

The California Water Code provides several enforcement remedies for discharges in violation of Board-adopted waste discharge requirements. The Regional Board could:

1) Issue a Cleanup and Abatement Order (CAO) or Cease and Desist Order (CDO) pursuant to Sections 13304 and 13301, respectively.

2) Impose administrative civil liability pursuant to Section 13350 (e) (1), and

3) Refer to the Attorney General to have a superior court impose civil liability pursuant to section 13350 (e) (2).

In addition, the Regional Board could take no action and monitor closely this discharger for the next few months; if these type of violations recur then one of the aforementioned enforcement actions should be taken.

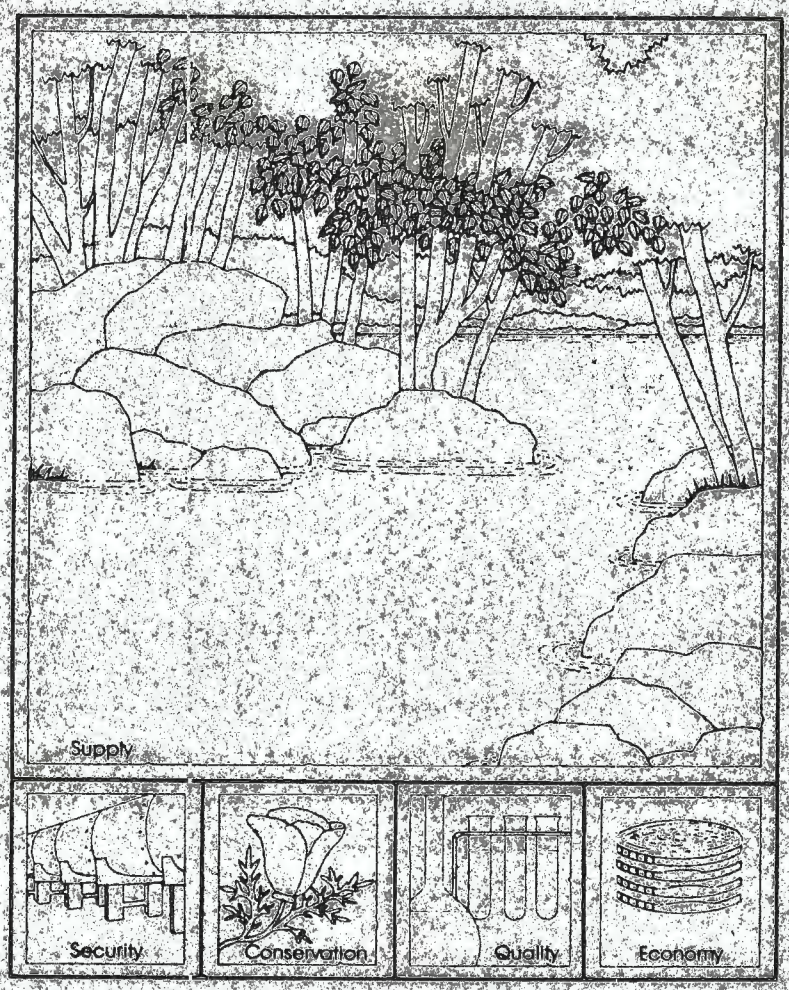
Relative to #1 above, it appears that this type of enforcement action is not applicable because it appears that Pacific Refinery has already taken necessary corrective actions.

Relative to #3, I do not recommend this type of enforcement action because there is no question that a violation occurred, and the amount of staff time necessary to refer this violation to the Attorney General would not benefit this Regional Board.

Relative to #2, I do recommend this type of enforcement action for this case because Pacific's violation of their NPDES permit probably caused an adverse environmental effect on the bay. In addition, I feel that these violations could have been easily prevented if Pacific Refinery had invested their time and money to train their operators on what appropriate actions to take when mechanical problems like the one on November 8th come up.

It should be noted that the Board has previously considered imposing administrative civil liability (ACL) for violations of effluent limits. This Board recently imposed an ACL for $150,000 to USX for one pH violation of an 8-hour duration.

URBAN WATER MANAGEMENT PLAN



November 1985

East Bay Municipal Utility District

EBMUD

Chapter IV
Water Supply Availability and Deficiency

This chapter describes the relationship between EBMUD's water requirements and available supplies, and discusses the risk and magnitude of potential future deficiencies. In May 1985, EBMUD's Board of Directors adopted a policy providing for an annual review of the available supply and a follow-up report by April 15 on the adequacy of the supply for the near- and long-term.

WATER SUPPLY

EBMUD has a legal entitlement to 325 MGD from the Mokelumne River and an additional supply of up to 10 MGD from local runoff into the terminal reservoirs. EBMUD also has a contract with the U.S. Bureau of Reclamation (USBR) for American River water from the Folsom South Canal which was executed in 1970. However, currently there are no facilities for conveying the water to the EBMUD service area.

Figure IV-1 is a location map of EBMUD's major water supply facilities, these facilities include: 1) Pardee and Camanche Reservoirs on the Mokelumne River; 2) three Mokelumne aqueducts extending from Pardee Reservoir to Walnut Creek; and 3) five local terminal reservoirs used to provide an emergency standby supply, reregulate the Mokelumne supply, and capture local runoff. Figure IV-2 shows a schematic diagram of the District's water system. The total projected water supply available to the District in the year 2020 is shown in Table IV-1.

Mokelumne Supply

EBMUD holds two water rights (License 11109 and Permit 10478) which together entitle it to divert up to 325 MGD from the Mokelumne River at the District's Pardee Reservoir and to put this water to use in portions of Alameda and Contra Costa Counties for municipal and industrial purposes. EBMUD also possesses other State licenses and permits related to hydropower development on the Mokelumne River and the appropriation of runoff at the terminal reservoirs in the District's service area.

EBMUD's entitlement to the Mokelumne River is available after the water needs of more senior right-holders have been met.

Water Supplies (MGD) Table IV-1

SOURCE	NORMAL PERIOD	DRY PERIOD 1928–35	CRITICAL PERIOD 1976–77
Mokelumne*	325	249	166
Terminal Reservoirs	10	0	0
USBR Contract	134	67 to 100	67

*2020 Conditions

USDA, Soil Conservation Service
5552 Clayton Road
Concord, CA 94521-4199
(415) 672-4577

(AMENDED)

SOIL SURVEY OF

Contra Costa County, California

United States Department of Agriculture
Soil Conservation Service
In cooperation with
University of California
Agricultural Experiment Station

Ref. #3

2 Miles

10000 Feet

Orthophotobase compiled by the USGS in 1970. Planimetric detail from USGS 7.5' series maps. Lambert Conformal Conic projection, 1927 North American datum. 10,000-foot grid based upon California coordinate system, Zone 3.

This map is one of a set compiled in 1974 as part of a soil survey by the United States Department of Agriculture, Soil Conservation Service, and the University of California Agricultural Experiment Station.

Land division corners are approximately positioned on this map.

TABLE 6.—Eng

Soil series and map symbols	Degree and kind of limitations for—				Suitabil source
	Local roads and streets	Septic tank filter fields	Dwellings without basement	Sanitary landfill (trench type)	Topso
Solano: Sh, Sk	Severe: high shrink-swell potential; low strength.	Severe: very slow permeability.	Severe: high shrink-swell potential.	Moderate: somewhat poorly drained clay loam and silty clay loam subsoil.	Poor: high changeable sodium.
Sorrento: Sm	Moderate: moderate shrink-swell potential; medium strength.	Severe: moderately slow permeability.	Moderate: moderate shrink-swell potential.	Moderate: silty clay loam.	Fair: silty clay loam.
Sn	Moderate: medium strength; low shrink-swell potential below depth of 40 inches.	Slight if tile placed below depth of 40 inches.	Moderate: moderate shrink-swell potential.	Severe: silty clay loam over sand; rapid permeability below depth of 40 inches.	Fair: silty clay loam; sand below depth of 40 inches.
Sycamore: So	Severe: poorly drained.	Severe: water table at depth of 3½ to 5 feet; moderately slow permeability.	Moderate: moderate shrink-swell potential; medium strength.	Severe: water table at depth of 3½ to 5 feet.	Fair: silty clay loam.
Sp	Severe: poorly drained; high shrink-swell potential and low strength below depth of 40 inches.	Severe: water table at depth of 3½ to 5 feet; slow permeability below depth of 40 inches.	Severe: high shrink-swell potential and low strength below depth of 40 inches.	Severe: water table at depth of 3½ to 5 feet; clay below depth of 40 inches.	Fair: silty clay loam over clay.
Tierra: TaC, TaD, TaE	Severe: high shrink-swell potential and low strength in subsoil; slope in TaE.	Severe: very slow permeability; slope in TaE.	Severe: high shrink-swell potential; slope in TaE.	Poor: clay subsoil.	Fair for TaC: loam and clay loam over clay. Fair for TaD: loam and clay loam over clay; slope. Poor for TaE: slope.

See footnote at end of table.

ICF CONSULTING ASSOCIATES, INCORPORATED 649 Mission Street, Suite 525, San Francisco, CA 94105 (415) 957-0110

RECOMMENDATIONS FOR FURTHER ACTION

DATE: June 4, 1987

PREPARED BY: Rick Dreessen, ICF Technology, Inc.

SITE: Hercules Powder Company
Hercules Properties, Ltd. Industrial Site
560 Railroad Avenue
Hercules, CA 94547
Contra Costa County

TDD #: F9-8701-76

EPA ID #: CAT080012297

1. Initial FIT Conclusions and Recommendations for Further Action:

a) Site Description:

The Hercules Powder Company (HPC) site is located on San Pablo Bay at 560 Railroad Avenue, Hercules, California (Exhibit 1, Site Location Map). In 1881 California Powder Works (CPW) began operating an explosives-manufacturing facility on this 1300-acre site. E.I. Dupont de Nemours Powder Company (Dupont) took title to the property in 1906. Antitrust laws forced Dupont to dissolve its dynamite holdings in 1912 and HPC purchased the plant. HPC produced explosives on-site until 1965. An ammonia plant was added in 1940. HPC gradually expanded between 1959 to 1966 until its product line included methanol, formaldehyde, urea, ammonia, and ammonium nitrate.

In 1968 the company name was changed to Hercules, Inc. (HI) since explosives were no longer produced. In 1976 the site was sold to Valley Nitrogen Producers (VNP), who modernized and expanded the plant for fertilizer production. In November 1979 the plant was shut down due to prolonged labor disputes and existing inventories sold (1). In 1980 Hercules Properties Inc. (HPI), a group of investors, bought 358 acres encompassing the 150-acre industrial complex and surrounding undeveloped acreage. Of the 358 acres, 50 were sold to D&S Investors in 1980 and the remainder to United Financial Operations (UFO) in 1981. UFO retained the 150-acre methanol complex and sold 158 acres to Bio-Rad Laboratories in 1982.

On October 1, 1980 the California Regional Water Quality Control Board (RWQCB) granted a National Pollution Discharge Elimination System (NPDES) permit

Ref. #4

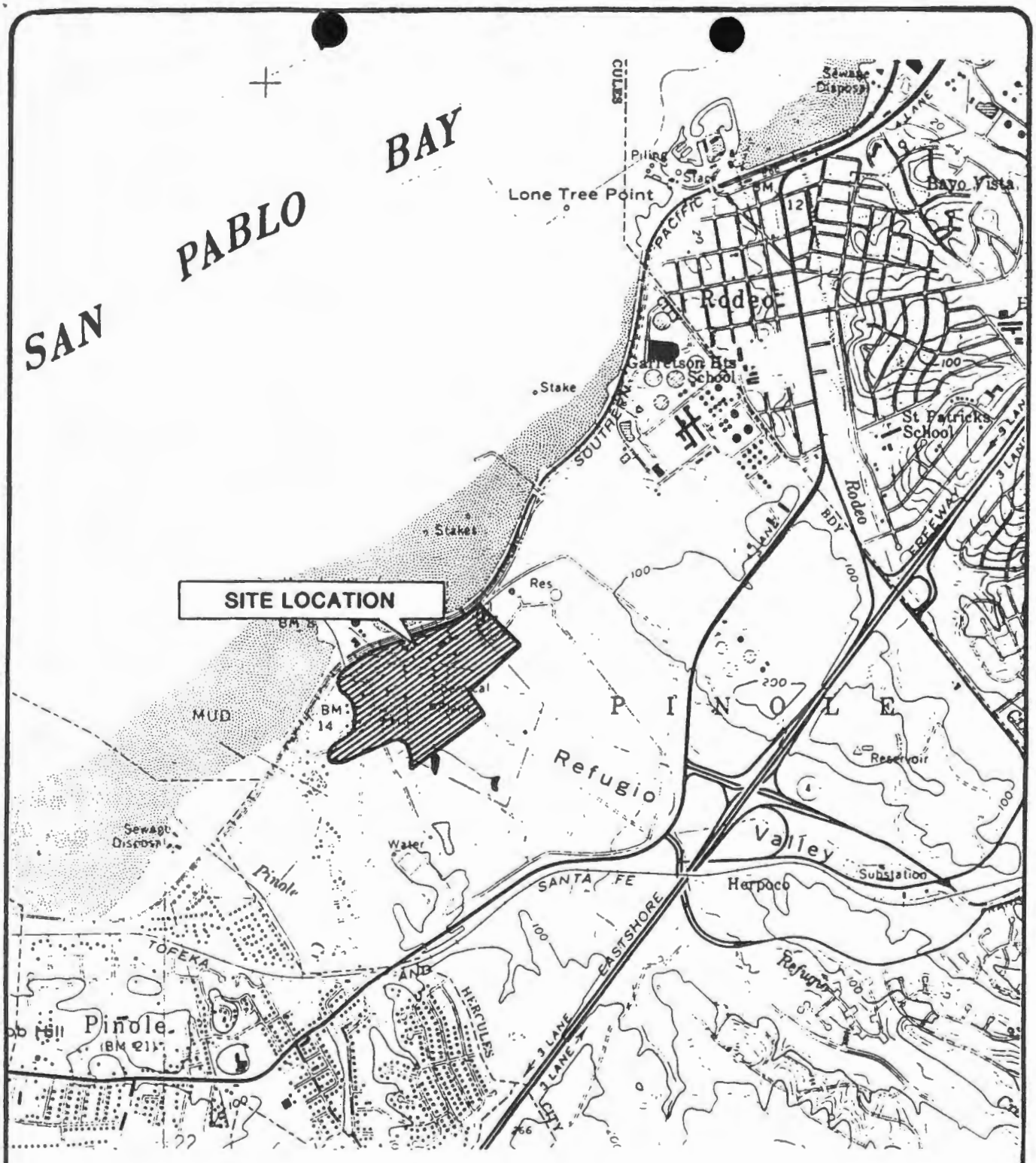


Exhibit 1 Site Location Map

Hercules Powder Company
560 Railroad Ave.
Hercules, California 94547

N

Scale: 1" = 2,000'

0 2,000'

Mare Island Quad.
7.5' Series, 1980

"scores" of drums and bags of unknown materials in "various states of degradation" located in buildings 8252 and 2132, where the juveniles were found (12).

On June 12, 1985 CCCHS issued an Order of Compliance directing HPL to erect a 6 ft. fence, topped with barbed wire, around buildings 8252 and 2732. The fences were to have bilingual hazardous substances warning signs (13). HPL complied with this order June 14, 1985.

There has been no documented release of explosives on-site and as such no concern for potential of fire and/or explosion. Soil sampling conducted in 1986 by BCLA found no evidence of residual DNB, TNT, DNT, or nitroglycerine at the HPL Industrial Site.

Waste Type/Quantity:

On June 11, 1985, DOHS inspected buildings 8252 and 2132. TABLE II (Appendix A) lists materials found, state/form in which they were found, approximate quantities, and the hazardous properties. Building contents were not completely inventoried at this time (12).

On June 17, 1985, CCCHS issued an Order of Compliance requiring HPL to conduct a complete site inventory. This was completed in January 1986 and is summarized in TABLE III (Appendix A).

Metals found in soil samples (below TTLC limits) and ground-water samples (above TTLC limits) have the following Toxicity/Persistence Matrix Values: barium (18), cadmium (18), nickel (18), and selenium (15). Detailed information regarding these sampling efforts is given in the Observed Release Section.

Ground Water:

The HPL site is situated across the mouth of the Refugio Valley which is eroded into the Tertiary Rodeo shale, a "tight and impermeable" formation (16). Numerous borings into the Rodeo shale found the bedrock dry (depth not documented).

Ground water in the area is limited to a perched aquifer contained within 35 ft. of unconsolidated alluvium deposited on top of the Rodeo shale. WESCO reported ground-water depths for August, 1982 to be 5 ft below ground surface (17). The ground-water level is subject to seasonal variations due to the perched nature of the shallow aquifer and relatively small catchment area. Water quality analyses conducted by WESCO indicated that during seasons of low ground-water levels, the potentiometric gradient reverses, allowing salt water intrusion and rendering the ground water brackish and non-potable (17). Generally, though, ground-water flow follows the valley, southeast toward San Pablo Bay. RWQCB personnel have indicated ground water within three miles of the site is not used for domestic purposes due to the low aquifer yield of water bearing formations and the ground water's brackish nature (1).

There are no municipal wells in use within one mile of the site (18). Hercules municipal drinking water is supplied by the East Bay Municipal Utility District

(EBMUD). The extent of small water system and private well use is currently unknown. Net precipitation (November through April) is 5.5 inches (9).

Preliminary HRS evaluation indicates that the ground-water route score will not be high enough for inclusion on the National Priorities List (NPL) due to an apparent lack of target populations.

Surface Water:

The HPL Industrial Site is located on San Pablo Bay (See Exhibit 2, Facility Map). Refugio Creek, an intermittent creek, runs through the property.

According to RWQCB beneficial uses of San Pablo Bay are water contact and non-contact recreation, fish migration and spawning, estuarine habitat, wildlife habitat, preservation of rare and endangered species, commercial and sports fishing, navigation, and industrial service supply. There are no documented beneficial uses made of Refugio Creek.

As stated in the Ground-Water Section, Hercules municipal water is supplied by EBMUD. It is not known whether Refugio Creek, when flowing, is a drinking water source. The one year 24 hour rainfall for the Hercules area is approximately three inches (20).

There has not been a documented observed release via the surface water route. Sediment samples taken from Refugio Creek indicate higher levels of hydrocarbon contamination upstream of the Hercules site than downstream, indicating that the source of this contamination may be upstream of the HSL site (see Observed Release Section) (11). In addition, CERCLA excludes releases of petroleum and petroleum by-products from the definition of a "release". Therefore, these substances are not eligible for HRS scoring (21). For these reasons it is unlikely that the HRS surface water score will be high enough for inclusion on the NPL.

Other Factors/Other Agency Involvement:

DOHS, RWQCB, CCCHS, and the City of Hercules have been involved with HPL Industrial Site since discovery in May, 1980 by DOHS. Please refer to Appendix A, TABLE I, for chronology of enforcement, mitigation, and projected remedial efforts.

c. Conclusions and Recommendations:

In 1881 explosives manufacturing began at this site. E.I. DuPont de Nemours Powder Company took title to the property in 1906. In 1912, antitrust laws forced DuPont to dissolve its dynamite holdings, and the site was purchased by HPC. In 1976 HPC sold the property to VNP who, due to a prolonged labor dispute, closed the plant and sold the property in 1977. Since 1977 the site has been in the process of subdivision and redevelopment by several realty investor groups. At present the 150 acre Hercules Industrial Site is owned by HPC.

Soil on the HPL Industrial Site in Hercules, California, has been shown to be contaminated with numerous metals below DOHS TTLC's. Shallow ground water beneath the site has been found to contain these contaminants above DOHS TTLC's,

BAY AREA

AIR QUALITY MANAGEMENT DISTRICT
PERMIT SERVICES DIVISION
939 Ellis Street, San Francisco
California 94109
(415) 771-6000

PLANT DATA P-201

32
*Plant Identification No.**

PACIFIC REFINING COMPANY
Business Name

Other Business Name(s)(if any)

(415) 799-8000
Plant Telephone Number

THE COASTAL CORPORATION
Name of Parent Company (if any)

OLD HIGHWAY 40
Plant Address

HERCULES CALIFORNIA 94547
City State Zip Code

P. O. BOX 68
Mailing Address

HERCULES, CALIFORNIA 94547
City State Zip Code

PLANT AREA (Acres) ____

NUMBER OF EMPLOYEES 100

PRINCIPAL PRODUCT REFINED PETROLEUM PRODUCTS

OWNERSHIP:

(X) *Private*
( ) *Utility*
( ) *Local Government*
( ) *State Government*
( ) *Federal Government*

Please submit a name and address to whom all correspondence can be sent.

STEPHEN D. RICKS / VICE PRESIDENT
Contact Name *Title*

OLD HIGHWAY 40
Street Address

HERCULES CALIFORNIA 94547
City State Zip Code

(415) 799-8000
Telephone Number

**Plant Identification Numbers are assigned by the BAAQMD. Leave blank if number is not known.*

L. R. NATH; CHIEF ENVIRONMENTAL ENGINEER
Name & Title of person preparing this form

FLUOR DANIEL

Ref. #1

9/84

PERMIT SERVICES SECTION
BAY AREA AIR QUALITY MANAGEMENT DISTRICT
939 Ellis Street, San Francisco, CA 94109
(415) 771-6000

EMISSIONS SUMMARY
P-202

COMPANY NAME PACIFIC REFINING COMPANY PLANT NO. 32

PROJECT TITLE WASTEWATER TREATMENT UPGRADE PROJECT

	SOURCE		EMISSION IN LB/HR (ACTUAL)					USAGE		
	Description	No.	Particulate	Organic	SO_x	NO_x	CO	HRS/DAY	DAYS/WK	WKS/YR
1	DAF	S1	0	0	0	0	0	24	7	52
2	AERATION TANK	S2	0	0	0	0	0	24	7	52
3	CLARIFIER	S3	0	0	0	0	0	24	7	52
4	SLUDGE TANK	S4	0	0	0	0	0	24	7	52
5										
6										
7										
8										
9										
10										
11										
12										
13										
14										
15										
16										
17										
18										
19										
20										

New Construction (X) Demolition ( ) Alteration ( ) Tradeoff ( )
S1, S2, S3 and S4

Note: Give description of any trade-offs proposed. Note that BACT is required for any source (or facility) emitting over 15 lb/hr.

PREPARED BY L. R. NATH, FLUOR DANIEL Phone No. (415) 595-6342 Date 12/10/86

7/78

BAY AREA
AIR QUALITY MANAGEMENT DISTRICT
939 Ellis Street, San Francisco, CA 94109 (415) 771-6000

DATA FORM G
General Air Pollution Source

If in addition to the general process described hereon this source burns fuel, then complete Form C also. Use specific forms if applicable: Form T (organic tankage, loading), Form S (surface coating, solvent use).

Form G is not required for any source listed in BAAPCD Regulation 2, Section 1316, provided the source never emits more than 1.0 lb/hr of any contaminant.

1 Business Name: PACIFIC REFINING COMPANY Plant No: 32 (If unknown, leave blank)

2 SIC Number: 2911 Date of Initial Operation: NEW

3 Name or Description: DISSOLVED AIR FLOTATION (DAF) Source No.: S 1

4 Make, Model, and Rated Capacity of Equipment: 200 GALLONS PER MINUTE THROUGHPUT

5 Process Code* (Column A): 5017 Materials Code* (Column B): 300 Usage Unit* (Column C): GALLONS

6 Total throughput, last 12 months: _____ Usage Units* Max operating rate: 12,000 Usage Units*/hr

7 Typical % of total throughput: Dec-Feb _____ % Mar-May _____ % Jun-Aug _____ % Sep-Nov _____ %

8 Typical operating times: 24 hrs/day 7 days/week 52 weeks/year

9 For batch or cyclic processes: _____ min/cycle _____ min. between cycles

10 Exhaust gases from source: (at max. operation) Wet gas flow rate _____ cfm at _____ °F

Approximate water vapor content _____ vol %

EMISSION FACTORS (at maximum operating rate)

If this form is being submitted as part of an application for an AUTHORITY TO CONSTRUCT, completion of the following table is mandatory. If not, and the Source is already in operation, completion of table is requested but not required.

If this source also burns fuel, do not include those combustion products in the emission factors below; they are accounted for on Form C. If source test or other data are available for composite emissions only, estimate from those data the emissions attributable to just the general process and show below.

[ ] Check box if factors apply to emissions after Abatement Device(s).

		EMISSION FACTORS lbs/Usage Unit*	Basis Code (see reverse)
11	Particulate	0	0
12	Organics	0	8
13	Nitrogen Oxides (as NO_2). .	0	0
14	Sulfur Dioxide	0	0
15	Carbon Monoxide	0	0
16	Other: _____		
17	Other: _____		

18 With regard to air pollutant flow from this source, what source(s), abatement device(s) and/or emission points(s) are immediately downstream?

S	S	S					
A	A	A	P	P	P	P	P

*From Tables G-1 through G-7 (See listing on reverse side)

Person Completing this Form: L. R. NATH; FLUOR DANIEL Date: 12/10/86

6-8-77

BAY AREA
AIR QUALITY MANAGEMENT DISTRICT
939 Ellis Street, San Francisco, CA 94109 (415) 771-6000

DATA FORM G
General Air Pollution Source

If in addition to the general process described hereon this source burns fuel, then complete Form C also.
Use specific forms if applicable: Form T (organic tankage, loading), Form S (surface coating, solvent use).

Form G is not required for any source listed in BAAPCD Regulation 2, Section 1316, provided the source never emits more than 1.0 lb/hr of any contaminant.

1 Business Name: PACIFIC REFINING COMPANY Plant No: 32 (If unknown, leave blank)

2 SIC Number: 2911 Date of Initial Operation: NEW

3 Name or Description: AERATION TANK Source No.: S 2

4 Make, Model, and Rated Capacity of Equipment: 200 GALLONS PER MINUTE THROUGHPUT

5 Process Code* (Column A): 5017 Materials Code* (Column B): 300 Usage Unit* (Column C): GALLONS

6 Total throughput, last 12 months: _____ Usage Units* Max operating rate: 12,000 Usage Units*/hr

7 Typical % of total throughput: Dec-Feb _____ % Mar-May _____ % Jun-Aug _____ % Sep-Nov _____ %

8 Typical operating times: 24 hrs/day 7 days/week 52 weeks/year

9 For batch or cyclic processes: _____ min/cycle _____ min. between cycles

10 Exhaust gases from source: (at max. operation) Wet gas flow rate _____ cfm at _____ °F

Approximate water vapor content _____ vol %

EMISSION FACTORS (at maximum operating rate)

If this form is being submitted as part of an application for an AUTHORITY TO CONSTRUCT, completion of the following table is mandatory. If not, and the Source is already in operation, completion of table is requested but not required.

If this source also burns fuel, do not include those combustion products in the emission factors below; they are accounted for on Form C. If source test or other data are available for composite emissions only, estimate from those data the emissions attributable to just the general process and show below.

[ ] Check box if factors apply to emissions after Abatement Device(s).

		EMISSION FACTORS lbs/Usage Unit*	Basis Code (see reverse)
11	Particulate	0	0
12	Organics	0	8
13	Nitrogen Oxides (as NO_2)	0	0
14	Sulfur Dioxide	0	0
15	Carbon Monoxide	0	0
16	Other:		
17	Other:		

18 With regard to air pollutant flow from this source, what source(s), abatement device(s) and/or emission points(s) are immediately downstream?

S	S	VS					
A	A	A	P	P	P	P	P

*From Tables G-1 through G-7 (See listing on reverse side)

Person Completing this Form: L. R. NATH; FLUOR DANIEL Date: 12/10/86

6-8-77

BAY AREA
AIR QUALITY MANAGEMENT DISTRICT
939 Ellis Street, San Francisco, CA 94109 (415) 771-6000

DATA FORM G
General Air Pollution Source

If in addition to the general process described hereon this source burns fuel, then complete Form C also. Use specific forms if applicable: Form T (organic tankage, loading), Form S (surface coating, solvent use).

Form G is not required for any source listed in BAAPCD Regulation 2, Section 1316, provided the source never emits more than 1.0 lb/hr of any contaminant.

1 Business Name: PACIFIC REFINING COMPANY Plant No: 32 (If unknown, leave blank)

2 SIC Number: 2911 Date of Initial Operation: NEW

3 Name or Description: CLARIFIER Source No.: S 3

4 Make, Model, and Rated Capacity of Equipment: 200 GALLONS PER MINUTE THROUGHPUT

5 Process Code* (Column A): 5017 Materials Code* (Column B): 300 Usage Unit* (Column C): GALLONS

6 Total throughput, last 12 months: _____ Usage Units* Max operating rate: 12,000 Usage Units*/hr

7 Typical % of total throughput: Dec-Feb _____ % Mar-May _____ % Jun-Aug _____ % Sep-Nov _____ %

8 Typical operating times: 24 hrs/day 7 days/week 52 weeks/year

9 For batch or cyclic processes: _____ min/cycle _____ min. between cycles

10 Exhaust gases from source: (at max. operation) Wet gas flow rate _____ cfm at _____ °F

Approximate water vapor content _____ vol %

EMISSION FACTORS (at maximum operating rate)

If this form is being submitted as part of an application for an AUTHORITY TO CONSTRUCT, completion of the following table is mandatory. If not, and the Source is already in operation, completion of table is requested but not required.

If this source also burns fuel, do not include those combustion products in the emission factors below; they are accounted for on Form C. If source test or other data are available for composite emissions only, estimate from those data the emissions attributable to just the general process and show below.

[ ] Check box if factors apply to emissions after Abatement Device(s).

		EMISSION FACTORS lbs/Usage Unit*	Basis Code (see reverse)
11	Particulate	0	0
12	Organics	0	8
13	Nitrogen Oxides (as NO_2) . .	0	0
14	Sulfur Dioxide	0	0
15	Carbon Monoxide	0	0
16	Other: _____		
17	Other: _____		

18 With regard to air pollutant flow from this source, what source(s), abatement device(s) and/or emission points(s) are immediately downstream?

S	S	S					
A	A	A	P	P	P	P	P

*From Tables G-1 through G-7 (See listing on reverse side)

Person Completing this Form: L. R. NATH; FLUOR DANIEL Date: 12/10/86

6-8-77

BAY AREA
AIR QUALITY MANAGEMENT DISTRICT
939 Ellis Street, San Francisco, CA 94109 (415) 771-6000

DATA FORM G
General Air Pollution Source

If in addition to the general process described hereon this source burns fuel, then complete Form C also. Use specific forms if applicable: Form T (organic tankage, loading), Form S (surface coating, solvent use).

Form G is not required for any source listed in BAAPCD Regulation 2, Section 1316, provided the source never emits more than 1.0 lb/hr of any contaminant.

1 Business Name: PACIFIC REFINING COMPANY Plant No: 32 (If unknown, leave blank)

2 SIC Number: 2911 Date of Initial Operation: NEW

3 Name or Description: SLUDGE HOLDING TANK Source No.: S 4

4 Make, Model, and Rated Capacity of Equipment: 5,000 GALLONS PER WEEK

5 Process Code* (Column A): 5017 Materials Code* (Column B): 300 Usage Unit* (Column C): GALLONS

6 Total throughput, last 12 months: _____ Usage Units* Max operating rate: 30 Usage Units*/hr

7 Typical % of total throughput: Dec-Feb _____ % Mar-May _____ % Jun-Aug _____ % Sep-Nov _____ %

8 Typical operating times: 8 hrs/day 1 days/week _____ weeks/year

9 For batch or cyclic processes: _____ min/cycle _____ min. between cycles

10 Exhaust gases from source: (at max. operation) Wet gas flow rate _____ cfm at _____ °F

Approximate water vapor content _____ vol %

EMISSION FACTORS (at maximum operating rate)

If this form is being submitted as part of an application for an AUTHORITY TO CONSTRUCT, completion of the following table is mandatory. If not, and the Source is already in operation, completion of table is requested but not required.

If this source also burns fuel, do not include those combustion products in the emission factors below; they are accounted for on Form C. If source test or other data are available for composite emissions only, estimate from those data the emissions attributable to just the general process and show below.

[ ] Check box if factors apply to emissions after Abatement Device(s).

		EMISSION FACTORS lbs/Usage Unit*	Basis Code (see reverse)
11	Particulate	0	0
12	Organics	0	8
13	Nitrogen Oxides (as NO_2) . .	0	0
14	Sulfur Dioxide	0	0
15	Carbon Monoxide	0	0
16	Other: _____		
17	Other: _____		

18 With regard to air pollutant flow from this source, what source(s), abatement device(s) and/or emission points(s) are immediately downstream?

S	S	S					
A	A	A	P	P	P	P	P

*From Tables G-1 through G-7 (See listing on reverse side)

Person Completing this Form: L. R. NATH; FLUOR DANIEL Date: 12/10/86

6-8-77

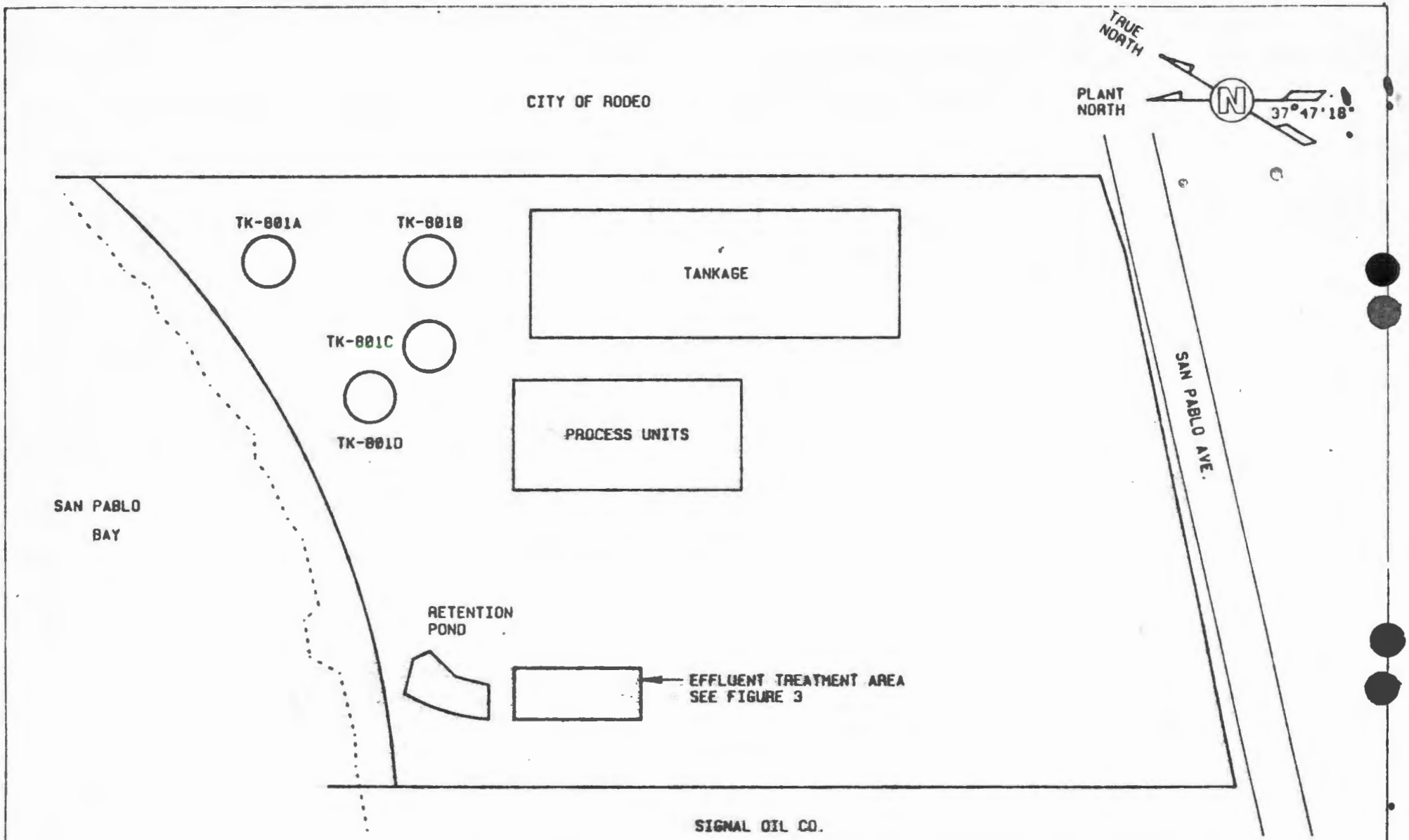


FIGURE 2.

PACIFIC REFINING CO. - GENERAL PLOT PLAN

FILE: PR-PLOT2 JR 11/21/88

Pacific Refining Company
a subsidiary of The Coastal Corporation

P.O. Box 68
Hercules, California 94547
415/799-6600

April 23, 1985

Mr. Philip L. Bobel, Chief, RCRA Programs Branch
United States Environmental Protection Agency, Region 9
215 Fremont Street
San Francisco, CA 94105

RE: Sampling and Analysis Plan For Biological Treatment Surface Impoundment At Pacific Refining Company (EPA ID. #CAT000617407)

Dear Mr. Bobel:

This letter is a summary of Pacific Refining Company's proposed sampling/analysis plan to determine the characteristics of the bottoms deposits in its biological treatment lagoon. We feel these plans should satisfy the requirements outlined in your letter of March 7, 1985, defining the information required to determine whether regulation of this surface impoundment under RCRA is appropriate.

In brief, we propose to sample the bottom deposits at eight, locations distributed randomly around the pond, and analyze the samples for ph and total sulfide, and perform the EP toxicity test for the eight priority metals, (As., Ba., Cd., Cr., Pb., Hg., Se., and Ag.).

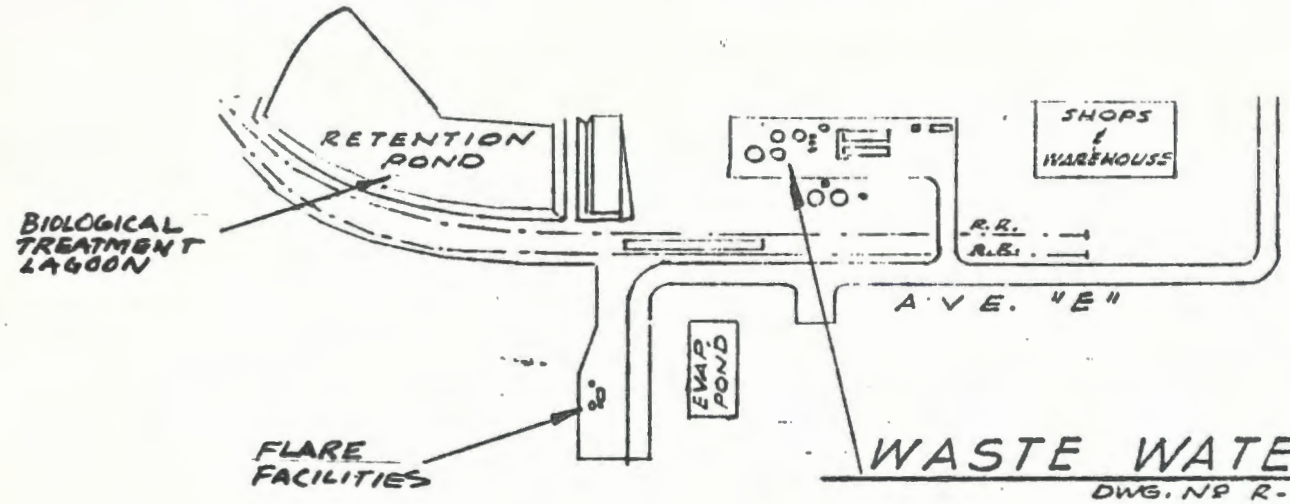
BACKGROUND

The impoundment in question, has a volume of approximately 1.5 million gallons (roughly 300' x 100' x 8' depth). It is the final biological treatment lagoon for refinery effluent water prior to discharge to San Pablo Bay. The pond contains eight mechanical aerator/mixers to keep the biological organisms in suspension, and to maintain an adequate oxygen concentration for biological metabolism. The waste water entering the lagoon undergoes primary API oil/water separation to remove floatable oil and solids, and secondary colloidal oil removal by a dissolved air floatation unit. The water entering the pond in question, typically contains fifteen to twenty PPM of soluble oil and grease. As it enters the pond, the raw effluent is quickly diluted with pond water by a 1200 GPM circulation pump, which picks up the influent with about five times its volume of pond water, and distributes it to six locations around the lagoon near aerators. This system ensures that the pond contents are well mixed. The effluent from the pond is tested on a weekly basis in accordance with the refinery's NPDES permit. The pond ph is closely controled at about seven by automatic equipment to ensure a healthy environment for the desirable microorganisms.

2119.1061

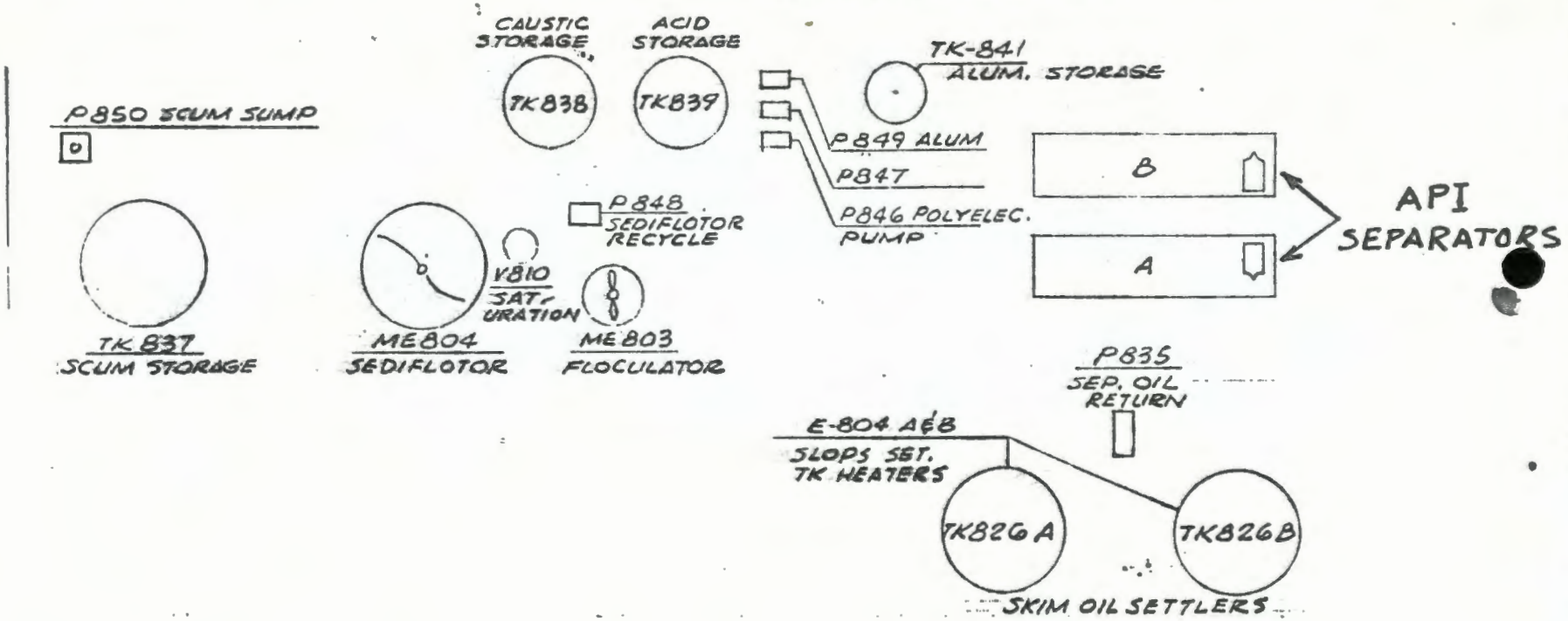
PACIFIC REFINING COMPANY

Water Treatment Plot Plan



WASTE WATER TREATMENT

DWG. NO R-0086 REV. 3



Refineries on the Bay run afoul of regulations by dumping toxic waste

By Jane Kay
EXAMINER ENVIRONMENTAL WRITER 4/6

RODEO — Along San Pablo Bay in northern Contra Costa County, oil refineries are on the scenic route.

Clusters of tanks and stacks overlook the shallow, wind-torn waters between Point Richmond and the Carquinez Strait, along which gasoline, fuel oil and road tar have been manufactured since the late 1800s.

Drawn to the Bay because of the ease with which tankers come in and waste water goes out, the refineries operated for decades with no regulation of their chemical discharges.

Now a $23.6 million enforcement action against Union Oil Co. has brought scrutiny to the kinds of chemical wastes being dumped into the Bay by six large oil companies.

Millions of gallons of waste water contaminated with cancer-causing benzene, toxic metals and other poisonous chemicals are flowing from the petroleum refineries into the Bay, according to the officials at the San Francisco Bay Regional Water Quality Control Board.

State regulators complained to the U.S. Environmental Protection Agency three months ago about the inadequacy of federal regulations controlling the refineries.

"Some limitations are outdated and allow for extremely lax control. They (the refineries) can have huge plant upsets and still meet limits,"

State officials got unexpected support last month when the EPA's national and regional staffs agreed to establish tougher limits on toxic discharges by refineries.

After reviewing chemical analyses of the pollutants coming out of the refineries, Judith Ayres, administrator of EPA Region 9 in San Francisco, wrote a letter seeking federal funds to develop the tougher standards.

Petroleum refineries as a group provide the largest industrial discharge to the Bay.

"Gasoline has a minimum of 200 different compounds. It's a soup," said Thomas Mumley, chemical engineer for the regional water board.

"Benzene is the octane booster in no-lead gasoline," he said. "The companies have long, long printouts of the chemicals in their waste streams. They're taking crude oil and trying to refine it down to something that will burn well in a think of as a basic organic hydrocarbon is in crude oil."

The six Bay Area refineries are Unocal at Rodeo, Chevron USA at Richmond, Tosco Corp. and Shell Oil Co. at Martinez, Exxon Corp. at Benicia and Pacific Oil Co. at Hercules.

Other petrochemical pollutants in the Bay include pesticides from farms. Several of the most commonly used pesticides in the Delta contain petroleum hydrocarbons.

A pioneer study by Tiburon Laboratory scientists at the National Marine Fisheries Service correlated the presence of benzene, xylene and toluene with hardening of the ovaries in ready-to-spawn striped bass.

The researchers also found several toxic metals at higher levels in fish in the Bay-Delta estuary than in fish from the Hudson River.

The study was begun in 1978 in response to the state Department of Fish and Game's documentation of a long-term decline in the number of striped bass in the Bay.

Until last year, when the state ordered the six refineries to test for heavy metals and toxic organic chemicals, little was known about the types and concentrations of pollutants flushing into the Bay.

Although the EPA had required the refineries to monitor their discharges since 1974, it had exempted many chemicals from testing.

At the time, the EPA's rationale was that testing wasn't necessary because the microbes in the companies' on-site biological treatment plants would gobble up the benzene, solvents and other toxic organic chemicals. The agency assumed that heavy metals would be tied up in the remaining sludge, so the pollutants would not threaten the Bay.

But in the case of Unocal, storm runoff rushed through the refineries, sending millions of gallons a day of untreated petroleum wastes into the Bay.

The Unocal plant, the oldest refinery on the coast, is not typical of the other major oil companies. Even when there are no storms, much of its waste goes directly into the Bay without benefit of chemical-removing treatment, Michael D. Drennan of the regional water board said last week.

"To the best of my knowledge, the routine bypassing that occurs at Union is not typical of the other refineries in the Bay Area," Drennan said.

Unocal spokesman Barry Nelson said the company was not told by the state that all of its discharge had to be treated. "We weren't required to go through the bioplant with everything," he said.

According to records at the water-quality board, Unocal's plant bypassed its own treatment plant more than 2,300 days between 1977 and 1985.

The federal Clean Water Act says there shall be "no bypass of untreated waste water to waters" of the nation.

On March 5, the water-quality board voted to seek $23.6 million in civil penalties from Unocal for violating its discharge permit and for not reporting violations.

The state attorney general's office is considering whether to petition for the civil penalties in superior court.

Further, the water-quality board had asked the attorney general's office to seek an injunction ordering Unocal to increase the capacity of its discharge treatment plant by 1988. That would back up the administrative order already issued by the water-quality board.

The Contra Costa County district attorney's office is investigating the possibility of criminal charges against Unocal for violating its discharge permit by falsifying or failing to report results of water monitoring.

Stephan Volker, a Sierra Club attorney, takes the position that Unocal could comply immediately by expanding its storage capacity temporarily until it improves the treatment system.

Unocal's Nelson said "a study is under way" to develop other ways of treating the waste. In the past, he said, the quality standards were met except "in odd cases."

But the state's position is that even when companies don't violate their permits, they cause pollution problems, said Mumley, the water board engineer.

Despite the treatment of discharges, state-required testing by the six companies over the past year has turned up high levels of toxic lead, nickel, selenium, vanadium and zinc, Mumley said.

Exxon, a company that has had no permit violations and is "trying to do everything right," according to Mumley, still had fish kills from the treated effluent.

Some of the toxic chemicals found in Unocal's untreated discharge to the Bay were:

- Benzene, chloroform, trichloroethane, vinyl chloride and dichloroethylene, all known or suspected carcinogens.
- Phenolic compounds — including phenol, or carbolic acid — which are acutely and chronically toxic to fish and other aquatic animals.
- Chlorophenols — formed by chlorinating, or disinfecting, phenols — which produce an unpleasant taste in fish flesh.
- Sulfides, soluble salts that are toxic to aquatic life.

Oil and grease also were found in the discharged water.

The call for EPA funds comes as a $13 million request from the Cali-

CAD009108705
CAD009114919
CAD000072751
CAD009164021
CAD063001770
✓CAT000617407

fornia congressional delegation to study Bay pollution appears to be stalled.

The Bay is considered the major estuary in the United States "most modified by human activity," said a U.S. Geological Survey study recently published in Science magazine.

The problems of the Bay "appear less severe than those of other large urbanized estuaries," the study said.

Yet toxic waste from agricultural and industrial activities have been detrimental to birds and marine life, the study said. The decrease of fresh water flowing to the Bay has reduced the ability of the estuary to assimilate wastes, it said.

State regulators told the EPA in December that they don't believe the refineries are using the "best available" technology to clean up the chemicals in their discharges.

In urging the EPA to re-evaluate its stance on controls, state officials wrote, "We are concerned that a group of toxic pollutants that were detected in a significant number of refinery effluents, and at concentrations that may cause toxic effects, has not been addressed adequately."

The oil companies don't like to hear it, but if biological treatment isn't cleaning up the contaminants, the companies may have to pay for more sophisticated, expensive treatment systems. One such system uses carbon particles to remove pollutants from the waste water.

The largest oil company in the Bay Area, Chevron, has a waste stream of 13 million gallons a day. Its holding ponds alone occupy 220 acres.

The oil companies, along with the host of other Bay dischargers, are asking the regional water-quality board for proof that the contaminants are doing any harm.

Mumley said, "There's evidence that the Bay is stressed. We don't want to point our fingers at the refineries. But until we have an adequate data base, we can't assess their impact on the Bay."

The Sierra Club and Citizens for a Better Environment are credited with pressuring the state for the enforcement actions that have been taken by the state in the last two years.

On the heels of Citizens for a Better Environment's breakthrough survey called "Toxics in the Bay," the Sierra Club investigated the major industrial dischargers for permit violations. In June 1984, the Sierra Club filed "citizen enforcement suits" against Unocal, Tosco and Shell Oil for failing to comply with federal law.

Shell Oil was forced to pay $100,000 in penalties and agreed to limit the source of its violations.

A settlement among Tosco, the EPA, the state and the Sierra Club for $500,000 in civil penalties is expected to become final next month.

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

STATE OF CALIFORNIA
EDMUND G. BROWN, GOVERNOR
HARVEY O. BANKS, DIRECTOR OF WATER RESOURCES

MARE ISLAND QUADRANGLE
CALIFORNIA
7.5 MINUTE SERIES (TOPOGRAPHIC)
SE/4 MARE ISLAND 15' QUADRANGLE

1560 III NW (SEARS POINT)
1560 II NW (CORDELIA)
1560 III SW (PETALUMA POINT)
1560 II SW (BENICIA)
(SAN QUENTIN) 1559 IV NW
(BRIONES VALLEY) 1559 I NW

122°22'30" 38°07'30" 122°15'

16 MI. TO U.S. 101
SEARS POINT (CALIF. 121) 8 MI.
1560 III NE (CUTTINGS WHARF)
SACRAMENTO 56 MI.
NAPA 13 MI.
BENICIA 7.5 MI.
1.9 MI. TO INTERSTATE 80
CROCKETT 2.5 MI.
VALLEJO 5.9 MI.
SACRAMENTO 64 MI.
MARTINEZ 10 MI.
PITTSBURG 21 MI.
SAN PABLO 2.9 MI.
SAN FRANCISCO 22 MI.
(RICHMOND) R. 4 W. 1559 IV NE
RICHMOND 5.7 MI.
SAN FRANCISCO 22 MI.

R. 4 W. R. 3 W. T. 3 N. T. 2 N.

1 900 000 FEET (2) 1 490 000 FEET (3) 590 000 FEET (3) 160 000 FEET (2) 560 000 FEET (3) 130 000 FEET (2) 1 470 000 FEET (3) 1 920 000 FEET (2)

4219000m.N. 4218 4217 4216 5′ 4215 4214 4213 4212 4211 2′30″ 4210 4209 4208 4207 4206 38°00′

5560000m.E. 556 557 558 20′ 561 562 17′30″ 563 564 5650000m.E.

SAN PABLO BAY

CARQUINEZ STRAIT

PINOLE SHOAL

Island No 1
Guadalcanal Village
NAVAL RES
Dutchman Slough
Salt Evaporators
Federal Terrace School
White St.
Austin Cr.
Sunrise Memorial Cem
Old Hillside Cem
Vallejo Heights
KNAB
Farragut Sch
MARE ISLAND STRAIT
MARE ISLAND NAVAL SHIPYARD
Radio Towers
VALLEJO
Park
Hosp
St Vincents Sch
Lincoln Sch
Water Front Mem Park
PO
City Hall
Gas
Radar Target
LEVEE
Pipeline Area
GOLF COURSE
Cem
Beacon
Light
BREAKWATER
End
Lights
Dolphins
Davis Pt
Oleum
OIL REFINERY
Substation
OIL TANKS
Sewage Disposal
Piling
Stack
Lone Tree Point
Bayo Vista
Rodeo
Hillcrest School
PACIFIC REFINING CO.
Carretson Hts School
St Patricks School
Stakes
Hercules Wharf
Chemical Plant
Hercules
Refugio Valley
Reservoir
Luzon
Herpoco
Water
Pinole Point
Nitro
Wilson Point
Sobrante
SAN PABLO
Gateley
Nob Hill
Pinole (BM 21)
Garrity Cr
Refugio Creek
Franklin Canyon
MUD
Stakes
Sewage Disposal

VALLEJO CITY BDY
VALLEJO CITY BOUNDARY
SOLANO CO
SONOMA CO
MARIN CO
CONTRA COSTA CO
HERCULES
PINOLE
CITY BDY
RAILROAD
SOUTHERN PACIFIC
ATCHISON TOPEKA AND SANTA FE
EASTSHORE FREEWAY
4 LANE
3 LANE
2 LANE
SEARS POINT ROAD
WILSON AVE
NAPA ST
NEBRASKA ST
TENNESSEE ST
FLORIDA ST
GEORGIA ST
MILITARY ST
BLVD
SAN PABLO AVE

Mapped, edited, and published by the Geological Survey

Control by USGS, USC&GS, and USCE

Topography from aerial photographs by photogrammetric methods and by planetable surveys 1948–49. Aerial photographs taken 1948 Revised from aerial photographs taken 1958. Field check 1959

Hydrography compiled from USC&GS charts 5525 and 5533 (1956)

Polyconic projection. 1927 North American datum
10,000-foot grids based on California coordinate system, zones 2 and 3
1000-meter Universal Transverse Mercator grid ticks, zone 10, shown in blue

Red tint indicates areas in which only landmark buildings are shown

Unchecked elevations are shown in brown

Dashed land lines indicate approximate locations

UTM GRID AND 1968 MAGNETIC NORTH DECLINATION AT CENTER OF SHEET
GN MN 0°25′ 8 MILS 17½° 311 MILS

SCALE 1:24 000
1 MILE 1000 0 1000 2000 3000 4000 5000 6000 7000 FEET 1 KILOMETER

CONTOUR INTERVAL 20 FEET
DOTTED LINES REPRESENT 5-FOOT CONTOURS
DATUM IS MEAN SEA LEVEL
DEPTH CURVES IN FEET—DATUM IS MEAN LOWER LOW WATER
SHORELINE SHOWN REPRESENTS THE APPROXIMATE LINE OF MEAN HIGH WATER
THE MEAN RANGE OF TIDE IS APPROXIMATELY 4 FEET

THIS MAP COMPLIES WITH NATIONAL MAP ACCURACY STANDARDS
FOR SALE BY U. S. GEOLOGICAL SURVEY, DENVER, COLORADO 80225, OR WASHINGTON, D. C. 20242
A FOLDER DESCRIBING TOPOGRAPHIC MAPS AND SYMBOLS IS AVAILABLE ON REQUEST

CALIF
QUADRANGLE LOCATION

ROAD CLASSIFICATION
Heavy-duty — Light-duty
Medium-duty — Unimproved dirt
Interstate Route — State Route

Revisions shown in purple compiled from aerial photographs taken 1968. This information not field checked

Purple tint indicates extension of urban areas

MARE ISLAND, CALIF.
SE/4 MARE ISLAND 15' QUADRANGLE
N3800—W12215/7.5

1959
PHOTOREVISED 1968
AMS 1560 III SE—SERIES V895

INTERIOR—GEOLOGICAL SURVEY, WASHINGTON, D. C.—1969

CA10006 17407